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Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Missile Defense Agency									DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)				PE 0603882C: Ballistic Missile Defense Mid-Course Segment							
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	1,472.683	1,027.371	1,346.181	0.000	1,346.181	1,112.655	1,291.790	1,099.029	1,033.213	Continuing	Continuing
AX08: Ground Based Midcourse Defense (GMD) Block 1.0	32.130	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	32.130
CX08: Ground Based Midcourse Defense (GMD) Block 3.0	1,112.792	810.518	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	1,923.310
WX08: GM Capability Development	0.000	3.834	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	3.834
XX08: Ground Based Midcourse Defense (GMD) Sustainment	249.519	194.297	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	443.816
MD08: Ground Based Midcourse	0.000	0.000	1,300.655	0.000	1,300.655	1,071.957	1,249.802	1,064.572	996.981	Continuing	Continuing
ZX40: Program-Wide Support	78.242	18.722	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	96.964
MD40: Program-Wide Support	0.000	0.000	45.526	0.000	45.526	40.698	41.988	34.457	36.232	Continuing	Continuing
Note											
The Fiscal Year 2011 program is balanced reflecting the four focus areas of the current Missile Defense Program: to develop, rigorously test, and field an integrated Ballistic Missile Defense System architecture to counter existing regional threats, continue a viable Homeland Defense against rogue threats beyond 2030; demonstrate our proven technologies to show Missile Defense works; and develop technologies to hedge against future missile threat growth.											
The best way to dissuade, deter, and defeat ballistic missile threats is through integrated ballistic missile defense capabilities -- weapons, sensors, and Command and Control Battle Management and Communications. A potential or actual attack may cross regions and may fly higher and faster than stand-alone, autonomous capabilities operated by a single Military Service can defend against. Integrated Ballistic Missile Defense capabilities draw on space-, land-, and sea-based assets operated by multiple Services to provide both the best sensor information on the enemy missile's location and track as well as a more diverse and effective set of weapon options for the Combatant Commander to defeat the attack -- all connected by a unifying Command & Control, Battle Management and Communications system. As a result, an effort funded in a Program Element may be critical to the success of efforts in the other Program Elements -- we refer to these connections as ``interdependencies``. Throughout the budget justification materials we have attempted to highlight interdependencies in order to fully explain the relationship between different parts of the proposed program.											

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<p>In accordance with the Missile Defense Agency revised budget structure, the content previously planned in Projects AX08, CX08, WX08 and XX08 in the Fiscal Year 2009-Fiscal Year 2010 budget submissions are now captured in Project MD08 for Fiscal Year2011 - 2015.</p>		
<p><u>A. Mission Description and Budget Item Justification</u></p> <p>To counter the Intercontinental Ballistic Missile and Intermediate Range Ballistic Missile threat, the United States deploys Ground-Based Midcourse Defense (GMD) interceptors in silos at Fort Greely, Alaska (FGA) and Vandenberg Air Force Base, California (VAFB) to defend our Homeland from Intercontinental Ballistic Missiles or Intermediate Range Ballistic Missile attack. In Fiscal Year 2010, we will continue the development of long-range Ground-based Midcourse Defense capabilities with missile fields at Fort Greely, Alaska and Vandenberg Air Force Base, where we will maintain 26 and four Ground-Based Interceptors (GBI), respectively. This work will improve protection of the United States against a limited number of rogue state launches of Intermediate Range Ballistic Missiles s and Intercontinental Ballistic Missiles s. Given the small inventory of long-range ballistic missiles deployed by rogue states, thirty highly-ready Ground Based Interceptors in hardened silos will provide the United States substantial fire power.</p> <p>Ballistic Missile Defense Systems engineering provides System Description Documents and System Specifications for elements to design, build, integrate and test Ballistic Missile Defense System components. These products optimize performance at the system level and further ensure that the assessment of the designed Ballistic Missile Defense System is based on sufficient flight tests, ground tests, modeling and simulation, and engineering analysis. Compliance of Ground Based Midcourse Defense to Ballistic Missile Defense System level requirements is monitored in a series of requirements and design reviews both at the system and element levels.</p> <p>The Ground Based Midcourse Defense capability requires quality of service from other Ballistic Missile Defense System elements such as Sensors, Aegis, and Command & Control, Battle Management and Communications to enable successful ballistic missile engagements to protect the U.S. Homeland. This includes the following data: accurate object location tracks and classification/discrimination from radar sources such as Sea-Based X-Band radar and Upgraded Early Warning Radars (UEWR) at Beale, Fylingdales, and Thule. Also on forward deployed radars such as Army Navy/Transportable Radar Surveillance and Aegis, object location track information is required from Command & Control, Battle Management and Communications which provides additional time for the Warfighter to plan defense engagements.</p> <p>Missile Defense Agency has a set of Unifying Missile Defense Functions, which increase the effectiveness of the Ballistic Missile Defense System (including probability of engagement success, increase in defended area and raid size capacity, additional redundancy of architecture, unity of command) through the integration of Missile Defense Agency developed capabilities. These Unified Missile Defense Functions efforts are Sensor Registration (reporting of sensor errors / biases), Correlation</p>		

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<p>(ensuring the information from multiple sensors seeing a threat relates to the same object), System Track (creating a single engageable track of a threat from multiple reports provided by different land, sea, and space based multiple sensors), Discrimination (identifying object details to determine the target from debris or decoys), Battle Management (combining the best sensors and shooters to ensure the highest probability of a kill), Hit / Kill Assessment (determining if the target selected was destroyed after missile impact), and Communications (providing the worldwide connection of sensors and shooters to command authorities). Unified Missile Defense Functions are implemented across the Ballistic Missile Defense System elements to create and utilize system level data and decisions that allow Combatant Commanders the ability to automatically and manually optimize sensor coverage and interceptor inventory to defend against all ranges of ballistic threats.</p> <p>Common Threat Engineering produces common and consistent adversary trajectory and signature data to enable Ballistic Missile Defense System and sub-system concept and requirements, design, verification, and assessment. Common threat data is contained in the Adversary Capability Document (ACD) and Adversary Data Packages (ADP) and drives Ballistic Missile Defense System ground tests, flight tests, digital simulations, and pre-mission analysis activities. It is also used to develop the Ballistic Missile Defense System Description Document and Ballistic Missile Defense System Specification.</p> <p>Modeling and simulation (M&S) activities support all phases of Ground Based Midcourse Defense development, including development of modifications to the Ground Systems and Ground Based Interceptor development, flight test missions, ground tests, war-games, exercises, and performance assessment. Models and simulations are tailored to the specific need of a component in its current phase of development, ranging from low-to-medium fidelity analyses supporting concept definition studies, to high-fidelity models used to support engineering development, or testing and are integrated into the Ballistic Missile Defense Digital Simulations Architecture. Digital simulations support Performance Assessment events, which provide critical system level performance data relative to all elements, the system engineer, Models and Simulations developers, Operational Test Agency (OTA) and the Warfighter. Further, the Models and Simulations digital tools are accredited for each application and for specific objectives; tools are put through a rigorous verification and validation process, reviewing coding and specifications, and comparing analyses against actual flight test results. Planning support is required to assist in the V&V plan development, test execution, analysis for Verification and Validation (V&V) reports and program office Models and Simulations certification. The Digital End-to-End simulation of the Ballistic Missile Defense System requires a Performance Assessment (PA) Integrated Verification & Validation (V&V) Plan and Report (at both element and system level), and a PA-system level Accreditation Plan and Report.</p> <p>Ground Based Midcourse Defense Element consists of a complex communications system, fire control capability, and ground-based interceptors. The Ground Based Midcourse Defense element is a key component of the Ballistic Missile Defense System, providing Combatant Commanders capability to engage ballistic missiles in the midcourse phase of flight. This phase, compared to boost or terminal, allows significant time for sensor viewing from multiple platforms and thus provides multiple engagement opportunities for hit-to-kill interceptors. Ground Based Midcourse Defense provides the capability to engage and destroy long-range threats in the midcourse battle space to protect the U.S. Homeland.</p>		

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<p>The Ground Based Midcourse Defense program is described as follows:</p> <p>Ground Based Midcourse Defense capability consists of communications systems, fire control capabilities, and ground-based interceptors. We will continue the development and fielding of the Ground Based Midcourse Defense capability to defend the U.S. against a limited number of rogue state launches of Intermediate-Range Ballistic Missiles and Intercontinental Ballistic Missiles.</p> <p>To prove the Ground Based Midcourse Defense capability works, we will execute a rigorous test program that includes expanding our flight and ground test programs to test our capability against intermediate and long-range threats to build the confidence of U.S. and allied stakeholders in the Ballistic Missile Defense System, bolster deterrence against their use, and send a powerful message to potential adversaries looking to acquire ballistic missiles.</p> <p>We will continue to provide for the operations and sustainment of Ground Based Midcourse Defense fielded capability at Fort Greely, Alaska, Vandenberg Air Force Base, the Missile Defense Integration Operations Center (MDIOC), and across the nation-wide Ground Based Midcourse Defense Communications Network.</p> <p>Ground Based Midcourse Defense will pursue a competitive Development and Sustainment Contract (DSC) for future development; fielding; test; systems engineering, integration and configuration management; equipment manufacturing and refurbishment; training; and operations and sustainment support for the Ground Based Midcourse Defense system and associated support facilities.</p> <p>We will continue execution of a lifecycle management plan to sustain the Ground Based Midcourse Defense system through 2030 and beyond. To increase reliability of the Ground Based Interceptor fleet we will rotate newer Ground Based Interceptors into operational fleet and refurbish older Ground Based Interceptors for flight testing and operational spares.</p> <p>To improve the reliability of Ground Based Midcourse Defense Ground Systems, we will execute an obsolescence and technology refresh program for Ground Systems components to mitigate obsolescence issues.</p> <p>To improve the reliability of Ground Based Midcourse Defense Ground Systems, we will complete Missile Field 2 (MF2) at Fort Greely, Alaska and plan for the decommissioning of Missile Field 1 (MF1). We will execute an obsolescence and technology refresh program for Ground Systems components to mitigate obsolescence issues.</p>		

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0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)		PE 0603882C: Ballistic Missile Defense Mid-Course Segment			
B. Program Change Summary (\$ in Millions)					
	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Previous President's Budget	1,507.481	982.922	0.000	0.000	0.000
Current President's Budget	1,472.683	1,027.371	1,346.181	0.000	1,346.181
Total Adjustments	-34.798	44.449	1,346.181	0.000	1,346.181
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		44.449			
• Congressional Directed Transfers		0.000			
• Reprogrammings	7.290	0.000			
• SBIR/STTR Transfer	-22.088	0.000			
• Other Adjustment Detail	-20.000	0.000	1,346.181	0.000	1,346.181
Congressional Add Details (\$ in Millions, and Includes General Reductions)					
Project: CX08: Ground Based Midcourse Defense (GMD) Block 3.0				FY 2009	FY 2010
Congressional Add: GMD Upgrades and Enhancements				40.000	0.000
Congressional Add: GBI Vendor Base Sustainment				0.000	50.000
Congressional Add Subtotals for Project: CX08				40.000	50.000
Congressional Add Totals for all Projects				40.000	50.000
Change Summary Explanation					
Fiscal Year 2009 decrease includes Small Business Innovation Research (SBIR) / Small Business Technology Transfer (STTR) transfer of \$22M and \$20M of ``Other Adjustment`` by the Office of the Secretary of Defense (OSD).					
Fiscal Year 2009 increases include \$7.29 M in Missile Defense Agency Reprogramming and \$40 M in Congressional Adds for Ground Based Midcourse Defense Upgrades and Enhancements.					
No Fiscal Year 2011 data provided in PB10.					

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COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
AX08: Ground Based Midcourse Defense (GMD) Block 1.0	32.130	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	32.130
Quantity of RDT&E Articles	7	2	0	0	0	0	0	0	0		
Note In accordance with the Missile Defense Agency revised budget structure, the content previously planned in Projects AX08, CX08, WX08 and XX08 in the FY 2009-FY 2010 budget submissions are now captured in Project MD08 for FY2011 - 2015.											
A. Mission Description and Budget Item Justification Project AX08 provides funding for the development and fielding of additional assets and capability enhancements to the Ground Based Midcourse Program. These enhancements and activities include: Program is still delivering assets up to the 30th Ground Based Interceptor (with associated ground hardware), five In-Flight Interceptor Communication System (IFICS) Data Terminals (IDTs), and three Ground Based Midcourse Defense Fire Control nodes Developed and fielded the Capability Enhancement-II (CE-II) kill vehicle, which addresses obsolescence issues and provides additional processor throughput to support system-wide discrimination capabilities Upgraded Ground Systems hardware, software, and communications links that will include improvements for the Warfighter, strong authentication, booster drop avoidance, simultaneous test and operations upgrades, and hardware upgrades to begin addressing obsolescence issues Provided capability to conduct simultaneous test and operations of the Ground Based Midcourse Defense element Completed integration and testing of sensors including Upgraded Early Warning Radars (UEWRs) at Beale AFB and Fylingdales, U.K., the Cobra Dane radar at Shemya, AK, and the Sea-Based X-Band Radar											
B. Accomplishments/Planned Program (\$ in Millions)											
							FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Ground Systems							24.415	0.000	0.000	0.000	0.000

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
See Description Below						
FY 2009 Accomplishments: The Ground Based Midcourse Defense Ground Systems Component enables control and operation of the Ground Based Midcourse Defense Element as part of the Ballistic Missile Defense System. Ground Systems consists of the Ground Based Midcourse Defense ; Fire Control, Test Exerciser, External Systems Interface (ESI), Ground Based Midcourse Defense ; Communications Network (Ground Based Midcourse Defense Communications Network), In-Flight Interceptor Communications System (IFICS) Data Terminal (IDT), Launch Site Components (LSC) (silos, Silo Interface Vaults (SIVs)), Launch Support Systems (LSS) (Command Launch Equipment (Command Launch Equipment) and Launch Support Equipment (LSE)). Expanded and Improved Ground Systems capabilities Completed fielding of Ground Based Midcourse Defense ; Fire Control software version 6B which improved fault detection and isolation, and added ability to designate first stage booster drop exclusion zones Initiated fielding of Command Launch Equipment hardware and software version 4.1 to mitigate obsolescence and support an increased number of Ground Based Interceptors Completed fielding, integration, and testing of Ground Based Midcourse Defense Simultaneous Test and Operations (STO) Phase II upgrades to accommodate initial STO Completed Installation and Check-Out of 4th Operational Silo at Vandenberg Air Force Base with additional capability to support Flight Test						
FY 2010 Plans: Planned program found in Project CX08.						

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2011 Base Plans: NA						
FY 2011 OCO Plans: NA						
Ground Based Interceptor See Description Below FY 2009 Accomplishments: The Ground Based Interceptor program continues the development of Capability Enhancement-II (CE-II) Exoatmospheric Kill Vehicle (Exoatmospheric Kill Vehicle) and booster technologies. The CE-II Exoatmospheric Kill Vehicle will be demonstrated as part of the improvement process in both the ground and flight test programs. This enhancement addresses Exoatmospheric Kill Vehicle obsolescence issues and provides additional processor throughput to support system wide advanced discrimination capabilities. Ultimately the program will end with 30 3-stage configuration Ground Based Interceptors fielded. Development of this capability will enable the U.S. to defend itself from limited North Korean long-range threats. Expanded and improved interceptor fleet: Completed acquisition of four Ground Based Interceptors, and continue acquisition of two Ground Based Interceptors (Fielding) Completed acquisition of one Ground Based Interceptor (Flight Test) FY 2010 Plans: Complete delivery of final two Ground Based Interceptors (Fielding)		1.876	0.000	0.000	0.000	0.000

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B. Accomplishments/Planned Program (\$ in Millions)								
				FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2011 Base Plans: NA								
FY 2011 OCO Plans: NA								
BMDS Level Testing See Description Below FY 2009 Accomplishments: Ground Based Midcourse Defense Test and Evaluation plans and executes ground and flight tests to evaluate and verify Ground Based Midcourse Defense system performance and collect data to anchor models and simulations. Ground Based Midcourse Defense Test and Evaluation uses significant test infrastructure (ground-test facilities, ranges, sensors and instrumentation resources) to support measurement of system performance for all Ground Based Midcourse Defense element components. Ground Based Midcourse Defense Test and Evaluation integrates developmental and operational test planning, shares test resources, collects and assesses test data, collectively resolves test issues, minimizes the duplication of test resources and the time required to execute required testing, and supports Ballistic Missile Defense System level test and evaluation. At the end of Fiscal Year 2009, the Critical Engagement Conditions/Empirical Measurement Events (CEC/EME)** data necessary to validation, verification, and accreditation of modeling and simulation was 8% complete Completed Flight Test Ground Based Midcourse DefenseD-05 in Dec 2008; this test demonstrated the engagement of a target launched from Kodiak Launch Complex by a Ground Based Interceptor launched from Vandenberg Air Force Base; the Exoatmospheric Kill Vehicle successfully intercepted the target				5.839	0.000	0.000	0.000	0.000

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B. Accomplishments/Planned Program (\$ in Millions)											
						FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	
Completed Ground Test Distributed-03 in March 2009; this distributed ground test demonstrated Ballistic Missile Defense System capabilities with fielded assets and operational Ballistic Missile Defense System tactical communications Participated in Ground Test Focused-03c, the final, focused system-level assessment of element capabilities of the Ground Test-03 Campaign Hardware-in-the-Loop (Hardware-In-The-Loop) Test Events; Ground Test Focused-03c used the Integrated Ground Test (Ground Test Integrated-03) baseline test configuration to resolve issues encountered during previous Ground Test-03 Campaign Hardware-In-The-Loop Test Events ** Critical Engagement Conditions / Empirical Measurement Event (CEC/EME) are the conditions and events where data is obtained from flight and ground tests in order to anchor models and simulations. FY 2010 Plans: NA FY 2011 Base Plans: NA FY 2011 OCO Plans: NA											
Accomplishments/Planned Programs Subtotals						32.130	0.000	0.000	0.000	0.000	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• 0603175C: Ballistic Missile Defense Technology	117.602	189.229	132.220	0.000	132.220	236.875	239.873	197.118	197.852	0	1,310.769
	951.414	715.732	436.482	0.000	436.482	250.275	336.711	500.983	521.717	0	3,713.314

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C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• 0603881C: Ballistic Missile Defense Terminal Defense Segment											
• 0603883C: Ballistic Missile Defense Boost Defense Segment	384.365	182.317	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	566.682
• 0603884C: Ballistic Missile Defense Sensors	682.754	621.017	454.859	0.000	454.859	469.589	681.397	650.525	616.342	0	4,176.483
• 0603886C: Ballistic Missile Defense System Interceptor	308.869	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	308.869
• 0603888C: Ballistic Missile Defense Test and Targets	906.952	823.333	1,113.425	0.000	1,113.425	1,105.959	951.371	871.929	829.608	0	6,602.577
• 0603890C: Ballistic Missile Defense Enabling Programs	402.776	358.751	402.769	0.000	402.769	468.673	457.745	473.871	488.799	0	3,053.384
• 0603891C: SPECIAL PROGRAMS - MDA	182.998	250.185	270.189	0.000	270.189	269.040	450.645	517.486	601.315	0	2,541.858
• 0603892C: BMD AEGIS	1,054.323	1,435.717	1,467.278	0.000	1,467.278	1,021.878	1,112.668	1,076.739	923.316	0	8,091.919
• 0603893C: SPACE TRACKING & SURVEILLANCE SYSTEM	209.831	161.609	112.678	0.000	112.678	98.500	56.424	52.928	34.661	0	726.631
• 0603894C: MULTIPLE KILL VEHICLE	226.027	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	226.027
• 0603895C: BMD SYSTEM SPACE PROGRAM	23.250	12.492	10.942	0.000	10.942	11.182	11.347	11.749	12.155	0	93.117
• 0603896C: BMD C2BMC	275.174	334.734	342.625	0.000	342.625	364.085	289.778	323.922	298.936	0	2,229.254
• 0603897C: BMD HERCULES	51.629	47.932	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	99.561
• 0603898C: BMD JOINT WARFIGHTER SUPPORT	66.283	61.098	68.726	0.000	68.726	62.239	63.451	65.158	67.231	0	454.186
• 0603901C: DIRECTED ENERGY RESEARCH	0.000	0.000	98.688	0.000	98.688	101.371	103.449	104.572	104.141	0	512.221
	102.823	86.483	86.198	0.000	86.198	88.181	78.517	80.410	83.087	0	605.699

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C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• 0603904C: MISSILE DEFENSE INTEGRATION & OPERATIONS CENTER (MDIOC)											
• 0603906C: REGARDING TRENCH	3.159	6.130	7.529	0.000	7.529	8.295	8.286	8.479	8.675	0	50.553
• 0603907C: SEA BASED X-BAND RADAR (SBX)	143.878	167.153	153.056	0.000	153.056	150.104	159.832	160.163	197.099	0	1,131.285
• 0603908C: BMD EUROPEAN INTERCEPTOR SITE	348.722	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	348.722
• 0603909C: BMD EUROPEAN MIDCOURSE RADAR	73.728	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	73.728
• 0603911C: BMD EUROPEAN CAPABILITY	0.000	50.226	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	50.226
• 0603912C: BMD European Comm Support	26.016	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	26.016
• 0603913C: ISRAELI COOPERATIVE	0.000	201.323	121.735	0.000	121.735	111.100	113.101	116.114	119.172	0	782.545
• 0604880C: LAND-BASED SM-3	0.000	0.000	281.378	0.000	281.378	345.937	187.062	93.456	139.595	0	1,047.428
• 0604881C: Aegis SM-3 BLOCK IIA CO-DEVELOPMENT	0.000	255.987	318.800	0.000	318.800	405.500	416.300	337.300	227.500	0	1,961.387
• 0604883C: PRECISION TRACKING SPACE SYSTEM	0.000	0.000	66.969	0.000	66.969	123.851	184.800	348.360	482.952	0	1,206.932
• 0604884C: AIRBORNE INFRARED (ABIR)	0.000	0.000	111.671	0.000	111.671	103.636	123.591	103.668	58.773	0	501.339
• 0605502C: Small Business Innovative Research BMDO	124.788	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	124.788
• 0901585C: Pentagon Reservation	20.146	19.709	20.482	0.000	20.482	0.000	0.000	0.000	0.000	0	60.337
	87.151	52.403	29.754	0.000	29.754	29.421	29.974	30.567	31.171	0	290.441

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency									DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)				R-1 ITEM NOMENCLATURE PE 0603882C: Ballistic Missile Defense Mid-Course Segment				PROJECT AX08: Ground Based Midcourse Defense (GMD) Block 1.0			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• 0901598C: Management Headquarters-MDA											
D. Acquisition Strategy											
<p>The Ground Based Midcourse Defense program will continue to follow the Missile Defense Agency's capability-based acquisition strategy that emphasizes testing, development, and evolutionary acquisition through incremental development. The Agency has structured the missile defense acquisition strategy to continually provide needed upgrades to the Ground Based Midcourse Defense system components within authorized funding availability. This process minimizes the risk of obsolescence, provides opportunities for standards updates, and allows decision makers to make informed trades between cost, schedule, and performance while exploring operational and technological possibilities. Beginning in Fiscal Year 2011 and for the remainder of the program life cycle, Ground Based Midcourse Defense will incorporate tenets of competitive procurement in the acquisition strategy for all feasible elements of the weapons system. This competition based developmental approach will be enhanced within the Ground Based Midcourse Defense (GMD) program by additional test infrastructure, improved test management, and improved models and simulations that enhance GMD's ability to test in more complex and operationally realistic test environments earlier than the standard acquisition process.</p> <p>Additionally, Missile Defense Agency will transition from the existing legacy, project-oriented Systems Engineering and Technical Assistance (SETA) contractor construct to an Missile Defense Agency enterprise-wide Advisory and Assistance Services (A&AS) approach to support the Ballistic Missile Defense System mission. The objectives are to implement national engineering and support services for the Ballistic Missile Defense System mission across the Missile Defense Agency enterprise and Ground Based Midcourse Defense , enhance the sharing of ballistic missile defense expertise and knowledge across the agency, centralize the acquisition of support services manpower in a more efficient manner and reduce agency overhead costs enterprise-wide. A&AS support for Ground Based Midcourse Defense will include engineering and technical services; studies, analyses, and evaluation; and management and professional services.</p>											
E. Performance Metrics											
NA											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency											DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE					PROJECT				
0400: Research, Development, Test & Evaluation, Defense-Wide					PE 0603882C: Ballistic Missile Defense Mid-					AX08: Ground Based Midcourse Defense				
BA 4: Advanced Component Development & Prototypes (ACD&P)					Course Segment					(GMD) Block 1.0				
Product Development (\$ in Millions)														
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Ground Systems Ground Systems AX08	SS/CPAF	Boeing AL/AK/AZ/CA/CO/VA	176.946	0.000		0.000		0.000		0.000	0	176.946	Continuing	
Ground Based Interceptor Ground Based Interceptor AX08	SS/CPAF	Boeing AL/AK/AZ/CA/CO/UT/VA	276.150	0.000		0.000		0.000		0.000	0	276.150	Continuing	
Subtotal			453.096	0.000		0.000		0.000		0.000	0.000	453.096		
Remarks														
NA														
Support (\$ in Millions)														
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Ground Systems Ground Systems-1 AX08	TBD/TBD	MITRE AL	0.324	0.000		0.000		0.000		0.000	0	0.324	Continuing	
Ground Systems Ground Systems-2 AX08	C/FP	TSI AL	2.277	0.000		0.000		0.000		0.000	0	2.277	Continuing	
Ground Systems Ground Systems-3 AX08	C/CPFF	CSC AL	4.639	0.000		0.000		0.000		0.000	0	4.639	Continuing	
Ground Systems Ground Systems-4 AX08	TBD/TBD	USACE AL	0.810	0.000		0.000		0.000		0.000	0	0.810	Continuing	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency											DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE					PROJECT			
0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)					PE 0603882C: Ballistic Missile Defense Mid-Course Segment					AX08: Ground Based Midcourse Defense (GMD) Block 1.0			
Support (\$ in Millions)													
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Ground Systems Ground Systems-5 AX08	TBD/TBD	AMRDEC AL	0.540	0.000		0.000		0.000		0.000	0	0.540	Continuing
Ground Systems Ground Systems-6 AX08	C/CPFF	L3 Communications AL	0.893	0.000		0.000		0.000		0.000	0	0.893	Continuing
Ground Systems Ground Systems-7 AX08	C/CPFF	TSI AL	0.664	0.000		0.000		0.000		0.000	0	0.664	Continuing
Ground Systems SPT HSV AX08	C/CPAF	CSC AL	4.484	0.000		0.000		0.000		0.000	0	4.484	Continuing
Ground Based Interceptor Ground Based Interceptor-1 AX08	SS/FP	BAE Systems AL	3.037	0.000		0.000		0.000		0.000	0	3.037	Continuing
Ground Based Interceptor Ground Based Interceptor-2 AX08	SS/FP	TSI AL	0.740	0.000		0.000		0.000		0.000	0	0.740	Continuing
Ground Based Interceptor Ground Based Interceptor-3 AX08	TBD/TBD	AMCOM AL	0.557	0.000		0.000		0.000		0.000	0	0.557	Continuing
Ground Based Interceptor Ground Based Interceptor-4 AX08	TBD/TBD	Various Various	0.010	0.000		0.000		0.000		0.000	0	0.010	Continuing
Subtotal			18.975	0.000		0.000		0.000		0.000	0.000	18.975	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency											DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense Mid-Course Segment</i>				PROJECT AX08: <i>Ground Based Midcourse Defense (GMD) Block 1.0</i>					
Support (\$ in Millions)													
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Remarks NA													
Test and Evaluation (\$ in Millions)													
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			0.000	0.000		0.000		0.000		0.000			
Remarks NA													
Management Services (\$ in Millions)													
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			0.000	0.000		0.000		0.000		0.000			
Remarks NA													

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency							DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>			R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense Mid-Course Segment</i>			PROJECT AX08: <i>Ground Based Midcourse Defense (GMD) Block 1.0</i>				
		Total Prior Years Cost	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract	
Project Cost Totals		472.071	0.000	0.000	0.000	0.000	0.000	472.071		
Remarks NA										

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Exhibit R-4, RDT&E Schedule Profile: PB 2011 Missile Defense Agency																				DATE: February 2010								
APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)										R-1 ITEM NOMENCLATURE PE 0603882C: Ballistic Missile Defense Mid-Course Segment										PROJECT AX08: Ground Based Midcourse Defense (GMD) Block 1.0								
	FY 2009				FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Ground Based Interceptors 25-26	■																											
Flight Test GMD-05 (Ground Based Midcourse Defense Intercept Flight Test)	■																											
Ground Test Focused-03c (Full BMDS Distributed Test)	■																											
Flight Test GMD-05 Ground Based Interceptor	■																											
Ground Test Distributed-03 (Full BMDS Distributed Test)		■																										
Vandenberg Air Force Base 4th Operational Silo		■																										
Ground Based Midcourse Defense Fire Control 6B.1/CLE 4.1				■																								
Ground Based Interceptors 27-30				■	■	■																						

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Exhibit R-4A, RDT&E Schedule Details: PB 2011 Missile Defense Agency			DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense Mid-Course Segment</i>	PROJECT AX08: <i>Ground Based Midcourse Defense (GMD) Block 1.0</i>	

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Ground Based Interceptors 25-26	1	2009	1	2009
Flight Test GMD-05 (Ground Based Midcourse Defense Intercept Flight Test)	1	2009	1	2009
Ground Test Focused-03c (Full BMDS Distributed Test)	1	2009	1	2009
Flight Test GMD-05 Ground Based Interceptor	1	2009	1	2009
Ground Test Distributed-03 (Full BMDS Distributed Test)	2	2009	2	2009
Vandenberg Air Force Base 4th Operational Silo	2	2009	2	2009
Ground Based Midcourse Defense Fire Control 6B.1/CLE 4.1	4	2009	4	2009
Ground Based Interceptors 27-30	4	2009	2	2010

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency								DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)				R-1 ITEM NOMENCLATURE PE 0603882C: Ballistic Missile Defense Mid-Course Segment				PROJECT CX08: Ground Based Midcourse Defense (GMD) Block 3.0			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
CX08: Ground Based Midcourse Defense (GMD) Block 3.0	1,112.792	810.518	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	1,923.310
Quantity of RDT&E Articles	3	8	0	0	0	0	0	0	0		

Note

Fiscal Year 2009 requirements included Ground Based Interceptors 42 and 44 being reallocated for acceleration of the 2-stage Ground Based Interceptor flight test program. [European Capability Program Element (0603911C) and Ballistic Missile Defense European Interceptor Site Program Element (0603908C)] These Ground Based Interceptors became interceptors for Booster Verification Test (BVT-01) with Exoatmospheric Kill Vehicle (EKV) and Flight Test (FTG-10). However, Fiscal Year 2010 reflects a change to this requirement due to program restructuring.

In accordance with the Missile Defense Agency revised budget structure, the content previously planned in Projects AX08, CX08, WX08 and XX08 in the Fiscal Year 2009-Fiscal Year 2010 budget submissions are now captured in Project MD08 for Fiscal Year2011 - 2015.

A. Mission Description and Budget Item Justification

Project CX08 provides funding for the development and fielding of incremental component capability enhancements to Project AX08.

These enhancements include:

- Continue acquisition of 14 Ground Based Interceptors for fielding at Fort Greely, Alaska or Vandenberg Air Force Base to replace older fielded Ground Based Interceptors
- Continue refurbishment of older fielded Ground Based Interceptors
- Continue development of software upgrades for Ground Systems and the Ground Based Interceptor
- Continue fabrication of Launch Site Components for Missile Field-2
- Continue integration of first seven silos for Missile Field-2 and Missile Field-2 Mechanical Electrical Building (MEB)
- Continue Flight Test Program
- Continue support to Ballistic Missile Defense System level ground testing

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency				DATE: February 2010	
APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)		R-1 ITEM NOMENCLATURE PE 0603882C: Ballistic Missile Defense Mid-Course Segment		PROJECT CX08: Ground Based Midcourse Defense (GMD) Block 3.0	
Continue models and simulations to verify system performance; supports the Ballistic Missile Defense System Hardware-In-The-Loop (HWIL) Modeling and Simulation Program, which provides and integrates the Ballistic Missile Defense System system-level Hardware-In-The-Loop stimulation framework to support full-envelope Ballistic Missile Defense System ground test, flight test, and training events based upon Agency and Warfighter needs					
B. Accomplishments/Planned Program (\$ in Millions)					
	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Ground Systems	193.384	91.385	0.000	0.000	0.000
See Description Below					
FY 2009 Accomplishments: The Ground Based Midcourse Defense Ground Systems enable control and operation of the Ground Based Midcourse Defense Element as part of the Ballistic Missile Defense System. Ground Systems consists of the Ground Based Midcourse Defense Fire Control, Test Exerciser, and External Systems Interface (ESI), Ground Based Midcourse Defense Communications Network (Ground Based Midcourse Defense Communications Network), In-Flight Interceptor Communications System (IFICS) Data Terminal (IDT), Launch Site Components (LSC) (silos, SIVs), and Launch Support Systems (LSS) (Command Launch Equipment (Command Launch Equipment) and Launch Support Equipment (LSE)).					
Expanded and improved ground systems capabilities:					
Initiated development needed to support transition of the Ground Based Midcourse Defense Communications Network Long Haul Communications to the Defense Information Systems Agency (Defense Information Systems Agency) Completed the Long Haul Communications Transport (Long Haul Communications-T) Design Review, Deployment Readiness Review (DRR), and Test Readiness Review (TRR)and began fielding Defense Information Systems Agency hardware for Long Haul Communications-T					

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency				DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)		R-1 ITEM NOMENCLATURE PE 0603882C: Ballistic Missile Defense Mid-Course Segment		PROJECT CX08: Ground Based Midcourse Defense (GMD) Block 3.0		
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>Fielded a third network environment which provided the communications network to enable the Ground Based Midcourse Defense system to conduct simultaneous test (flight or ground), operations and development</p> <p>Fielded the second Relocatable IDT at Vandenberg Air Force Base providing the ability to conduct simultaneous test and ops at Vandenberg Air Force Base missile field</p> <p>Completed fielding of software build 6B.1 for Fire Control which provides capabilities for simultaneous flight test operations, improved correlation fusion multiple sensors, and 1st stage debris management</p> <p>Completed fabrication of ten (10) Launch Site Components for Missile Field-2</p> <p>Continued integration of Missile Field-2 at Fort Greely, Alaska</p> <p>Continued the Fort Greely Future Power Plant</p> <p><i>FY 2010 Plans:</i></p> <p>Continue improvement of Ground Systems capabilities:</p> <p>Modify and upgrade Ground Systems 6B suite of products to integrate additional forward based radars (6B.1.5) from Sensors's Army Navy/Transportable Radar Surveillance radars, software builds for Ground Based Midcourse Defense to provide Command & Control, Battle Management and Communications essential elements of information, 2-stage interceptor capability, Sea Based X-Band Radar-Interceptor Data Terminal dynamic positioning, Warfighter requested changes, and Fort Greely, Alaska Missile Field-2 support (6B.2 & Command Launch Equipment 4.3)</p> <p>Complete the Fort Greely Future Power Plant</p> <p>Develop software builds for continued support of the Flight Test capability</p> <p>Continue development needed to support transition of the Ground Based Midcourse Defense Communications Network Long Haul Communications to Defense Information Systems Agency</p> <p>Continue integration of first seven silos for Missile Field-2 and Missile Field-2 Mechanical Electrical Building (MEB)</p> <p>Continue storage of missile field hardware</p>						

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency				DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)		R-1 ITEM NOMENCLATURE PE 0603882C: Ballistic Missile Defense Mid-Course Segment		PROJECT CX08: Ground Based Midcourse Defense (GMD) Block 3.0		
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Complete fielding of Command Launch Equipment hardware and software to mitigate obsolescence and support an increased number of Ground Based Interceptors FY 2011 Base Plans: NA FY 2011 OCO Plans: NA						
BMDS Level Testing See Description Below FY 2009 Accomplishments: Missile Defense Agency Element testing is based on an integrated, comprehensive, and phased test program. Element systems, subsystems, and components are tested early in development and are necessary prior to conducting Ballistic Missile Defense System level testing. Ground Based Midcourse Defense Element level testing is funded as part of a developmental program and reflected in this Program Element (PE) submission. This Program Element also provides Ground Based Midcourse Defense participation in the consolidated Missile Defense Agency-wide System Test Program and the resources for the, planning, design, execution, and management of Ground Based Midcourse Defense in Ballistic Missile Defense System testing in accordance with the Ballistic Missile Defense System Test Policy, Missile Defense Agency Directive 3202.03 (January 2009). Ground Based Midcourse Defense Test and Evaluation plans and executes rigorous ground and flight tests to evaluate and verify Ground Based Midcourse Defense system performance and collect data to anchor models and simulations. Ground Based Midcourse Defense Test and Evaluation uses significant test infrastructure (ground-test facilities, ranges, sensors and instrumentation resources) to support measurement of system performance for all Ground Based Midcourse Defense element		149.483	85.284	0.000	0.000	0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency				DATE: February 2010		
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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>components. Ground Based Midcourse Defense ; Test and Evaluation integrates developmental and operational test planning, shares test resources, collects and assesses test data, collectively resolves test issues, minimizes the duplication of test resources and the time required to execute required testing, and supports Ballistic Missile Defense System level test and evaluation.</p> <p>Continued to test Ground Based Midcourse Defense ;capabilities:</p> <p>Conducted planning and pre-mission integration for Flight Test Ground Based Midcourse DefenseD-06, with Sea Based X-Band Radar using a Ground Based Interceptor launch from Vandenberg Air Force Base against a target launched from Reagan Test Site; launch rescheduled for 2QFiscal Year 2010</p> <p>Conducted planning for the Ground Test-04 Ballistic Missile Defense System Ground Test Series to assess Ballistic Missile Defense System capabilities with fielded assets and operational Ballistic Missile Defense System tactical communications</p> <p>Participated in Northern Command requested strategic focused test events (Fast Shield II and Ground Test Focused-03e) to assess Ballistic Missile Defense System capabilities, Warfighter Tactics, Techniques, and Procedures (TTPs) against updated Intercontinental Ballistic Missile Models</p> <p><i>FY 2010 Plans:</i></p> <p>At the end of Fiscal Year 2010, the Critical Engagement Conditions / Empirical Measurement Event (CEC/EME)** data necessary to validation, verification, and accreditation of modeling and simulations is projected to increase from 18% to 44% complete</p> <p>Participate in Booster Verification Test-01 (For reference: event executed under Program Element 0603911C)</p> <p>First time event for flying a 2-stage Ground Based Interceptor, performing Exoatmospheric Kill Vehicle separation from a 2-stage booster and delivering an Exoatmospheric Kill Vehicle to its insertion point</p>						

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Collect Critical Engagement Conditions / Empirical Measurement Event data necessary for validation, verification, and accreditation of modeling and simulation applications in the following areas: solar modeling and potential effects on intercepts, Exoatmospheric Kill Vehicle divert system performance, Exoatmospheric Kill Vehicle performance and maneuverability when reentering the atmosphere and 2-stage interceptor performance Support execution of Ballistic Missile Defense System Ground Test-04 test campaign to assess Ballistic Missile Defense System capabilities Demonstrate Ground Based Midcourse Defense Fire Control 6B.1.5 which includes quality of service from Sensors and Ballistic Missile Defense Command & Control, Battle Management and Communications for track inputs from two Army Navy/Transportable Radar Surveillance radars and correlation of multi-sensor tracks from Command & Control, Battle Management and Communications Conduct System Post-Flight Reconstruction using flight test data to assist in validation and updates of models and simulations ** Critical Engagement Conditions / Empirical Measurement Event (CEC/EME) are the conditions and events where data is obtained from flight and ground tests in order to anchor models and simulations. FY 2011 Base Plans: NA FY 2011 OCO Plans: NA						
Program Management See Description Below		190.948	184.580	0.000	0.000	0.000

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2009 Accomplishments: This effort provides for the prime contractor and government management of the Ground Based Midcourse Defense program. Included in this effort is program and business management, program administration, technical and testing oversight, subcontractor management, verification of hardware and software development, quality/safety/mission assurance, integrated logistic support, and government manpower and infrastructure to develop, test and sustain the Ground Based Midcourse Defense system and components. Provided government and contractor program staff and infrastructure for the overall management of the Ground Based Midcourse Defense program Provided technical and business management support activities, financial management, cost and schedule performance analysis, cost estimation and analysis, configuration management and integration activities Provided contractor program management, subcontract management, quality assurance, verification of hardware and software development, and technical and testing oversight Ensured Ground Based Midcourse Defense program compliance with internal and external direction, policies, and regulations Designated and implemented a ``Mission Assurance and Manufacturing Engineering Program`` to include Quality, Configuration Management, Manufacturing, Engineering, and Safety Provided Quality Safety and Mission Assurance (QSMA) operations to ensure compliance with Agency requirements for design, test, manufacturing, quality, safety and reliability						
FY 2010 Plans: Provide government and contractor program staff and infrastructure for the overall management of the Ground Based Midcourse Defense ;program Provide technical and business management support activities, financial management, cost and schedule performance analysis cost estimation and analysis, configuration management and integration activities						

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency				DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)		R-1 ITEM NOMENCLATURE PE 0603882C: Ballistic Missile Defense Mid-Course Segment		PROJECT CX08: Ground Based Midcourse Defense (GMD) Block 3.0		
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Provide contractor program management, subcontract management, quality assurance, verification of hardware and software development, and technical and testing oversight Ensure Ground Based Midcourse Defense program compliance with internal and external direction, policies, and regulations Continue a ``Mission Assurance and Manufacturing Engineering Program`` to include Quality, Configuration Management, Manufacturing, Engineering, and Safety Provide Quality Safety and Mission Assurance (QSMA) operations to ensure compliance with Agency requirements for design, test, manufacturing, quality, safety and reliability Provide Quality Safety (QS) infrastructure support for Agency operations FY 2011 Base Plans: NA FY 2011 OCO Plans: NA						
Element Engineering and Integration See Description Below FY 2009 Accomplishments: Ground Based Midcourse Defense Element Engineering and Integration (EE&I) provides systems engineering and integration essential for the development and fielding of the Ground Based Midcourse Defense hardware and software. Included in this effort are concept definition, requirements and interfaces, system design, integration, test planning and verification. Key products are development and maintenance of the technical baseline and critical engineering processes for implementation and delivery of an integrated Ground Based Midcourse Defense element capability.		122.720	122.609	0.000	0.000	0.000

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Ground Based Midcourse Defense will support the Ballistic Missile Defense System Hardware-In-The-Loop Modeling and Simulation Program by integrating into the Ballistic Missile Defense system-level Hardware-In-The-Loop single stimulation framework to support full-envelope Ballistic Missile Defense System ground test, flight test, and training events based upon Agency and Warfighter needs.						
Ground Based Midcourse Defense will support System Pre-Flight predictions for each system level flight test using the test framework set up with the Ballistic Missile Defense System configuration for a particular flight test. This provides the confidence in Flight Test execution by predicting element performance and exercising element interfaces. This work is also used to prove out the construct of the flight test to ensure the required data and data management plan will support System Post-Flight Reconstruction objectives. System Post-Flight Reconstruction will use a Hardware-In-The-Loop and/or a Digital Models and Simulations Environment to replicate the day of flight for the Ballistic Missile Defense System configuration, modified to represent the actual environmental conditions and target dynamics observed in flight. The results of this testing are used to increase confidence in the models and simulations by anchoring the results with emphasis on the Critical Engagement Conditions (CECs) and Empirical Measurement Events (EMEs) back to the real world event. System Post Flight Reconstruction is used for validation (anchoring) of models and simulations.						
Reengineered the Future Year Development Plan flight and ground test program to adopt a Simulation Based Acquisition (SBA) approach for evaluating system performance by collecting data where uncertainty exist identified by Critical Engagement Conditions (CECs) and Empirical Measurement Events (EMEs) for increasing accuracy and confidence from Models and Simulations applications Delivered digital simulations of the Ground Based Midcourse Defense weapon system for assessing operational performance in a variety of engagement scenarios and supported the annual performance assessment of the Ballistic Missile Defense System Integrated Ground Based Midcourse Defense digital simulations into a common framework for achieving Missile Defense Agency’s first comprehensive representation of the Ballistic Missile Defense System for assessing performance						

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency				DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)		R-1 ITEM NOMENCLATURE PE 0603882C: Ballistic Missile Defense Mid-Course Segment		PROJECT CX08: Ground Based Midcourse Defense (GMD) Block 3.0		
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Completed requirements integration and traceability analysis for future Ballistic Missile Defense System requirements and Unified Missile Defense Functions Updated Ground Based Midcourse Defense Capabilities Document to include Ballistic Missile Defense System requirements Conducted Ground Based Midcourse Defense Build D Element Requirements Review Ballistic Missile Defense System integrated Build D functionality for Ground Based Midcourse Defense includes use of Ballistic Missile Defense System Track to conduct engagements, interceptor feature-aided correlation, and support for system-level battle management engagement direction. Continued software management, verification, validation and specialty engineering Continued system analysis, integration, verification and information sharing with Warfighter community Conducted design, planning, pre- and post-flight test analysis and post-flight reconstruction activities FY 2010 Plans: Collection of test data from CECs/EMEs necessary for validation, verification, and accreditation of modeling and simulation representations used for assessing Ground Based Midcourse Defense weapon system performance Collect Critical Engagement Conditions / Empirical Measurement Event data necessary for validation, verification, and accreditation of modeling and simulation applications in the following areas: solar modeling and potential effects on intercepts, Exoatmospheric Kill Vehicle divert system performance, Exoatmospheric Kill Vehicle performance and maneuverability when reentering the atmosphere and 2-stage interceptor performance (For reference: event executed under Program Element 0603911C) Continue to deliver digital representations of the Ground Based Midcourse Defense weapon system to support the annual performance assessment Refine integration of Ground Based Midcourse Defense digital simulations into the Missile Defense Agency common framework for assessing Ballistic Missile Defense System performance						

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APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)		R-1 ITEM NOMENCLATURE PE 0603882C: Ballistic Missile Defense Mid-Course Segment		PROJECT CX08: Ground Based Midcourse Defense (GMD) Block 3.0		
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Continue system engineering effort enabling Unified Missile Defense Functions capabilities integration among Ground Based Midcourse Defense , Command & Control, Battle Management and Communications, and Sensors Continue requirements integration and traceability between Ballistic Missile Defense System Specification documents and corresponding Ground Based Midcourse Defense requirements and integration documentation Utilize Exoatmospheric Kill Vehicle Hardware-In-The-Loop space chamber (10V Chamber) for Flight Test Ground Based Midcourse DefenseD-06 post flight reconstruction (PFR) Continue software management, verification, validation and specialty engineering Continue system analysis, integration, verification and information sharing with Warfighter community Continue design, planning, pre- and post-flight test analysis for future flight and ground tests Perform information assurance (IA) activities: conduct engineering and architectural analyses/studies; provide operations and maintenance for IA capabilities; maintain IA workforce training and certification; support certification and accreditation testing and analysis FY 2011 Base Plans: NA FY 2011 OCO Plans: NA						
Ground Based Interceptor See Description Below FY 2009 Accomplishments: The Ground Based Interceptor development program continues the development of booster and CE-II Exoatmospheric Kill Vehicle technologies to defend the U.S. from limited Iranian long-range threats.		416.257	276.660	0.000	0.000	0.000

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
This demonstrated capability will enhance the Ballistic Missile Defense System against long and intermediate-range ballistic missile attacks.						
Expanded and improved the interceptor fleet:						
Completed refurbishment of two Ground Based Interceptors						
Accelerated the 2-Stage development program; initiated acquisition of one 2-Stage Ground Based Interceptor for the Booster Verification Test (Booster Verification Test-1 with Exoatmospheric Kill Vehicle) now scheduled for Fiscal Year 2010 (For reference: event executed under Program Element 0603911C)						
Continued development of the Ground Based Interceptor Fleet Avionics Upgrade / Obsolescence Program						
Continued acquisition of 14 Ground Based Interceptors						
Completed acquisition of one Ground Based Interceptor (3-Stage Flight Test) and initiated one Ground Based Interceptor (2-Stage Flight Test)						
Continued acquisition of one Ground Based Interceptor (2-Stage Ground Tests)						
Completed software deliveries for 9.0 and 22.0 which provided discrimination improvements for Exoatmospheric Kill Vehicle and 5.2 and 7.1 for Booster						
FY 2010 Plans:						
Continue to expand and improve interceptor fleet:						
Complete acquisition of three additional Ground Based Interceptors at Fort Greely, Alaska or Vandenberg Air Force Base to replace older fielded Ground Based Interceptors						
Continue acquisition of 11 Ground Based Interceptors to replace older fielded Ground Based Interceptors						
Complete acquisition of Booster Verification Test-01 with Exoatmospheric Kill Vehicle for 2-Stage Interceptor Verification Testing. (For reference: event executed under Program Element 0603911C)						

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APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)		R-1 ITEM NOMENCLATURE PE 0603882C: Ballistic Missile Defense Mid-Course Segment		PROJECT CX08: Ground Based Midcourse Defense (GMD) Block 3.0				
B. Accomplishments/Planned Program (\$ in Millions)								
				FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Continue development of software upgrades for Ground Based Interceptor Complete refurbishment of two Ground Based Interceptors FY 2011 Base Plans: NA FY 2011 OCO Plans: NA								
Accomplishments/Planned Programs Subtotals				1,072.792	760.518	0.000	0.000	0.000
				FY 2009	FY 2010			
Congressional Add: GMD Upgrades and Enhancements FY 2009 Accomplishments: FY 2010 Plans: Integrated the secondary Fort Greely, Alaska communication routes from Building 1768 to the Launch Facilities (LF-02, LF-03, LF-21, LF-23, LF-24) into the Command Launch Equipment network Repaired a Ground Based Interceptor Communications Link Subsystem and purchased additional Ground Based Interceptor test equipment Designed and initiated Fort Greely, Alaska automated power distribution control system to assist in controlling power spikes and allow automatic sequenced restart of system if recovering from a blackout Provided Subject Matter Expert review and assist in upgraded ground surveillance radar design of the Fort Greely, Alaska Missile Defense Complex security enhancements Initiated build out of the Consolidated Training Center (CTC) at Fort Greely, Alaska				40.000	0.000			

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B. Accomplishments/Planned Program (\$ in Millions)											
								FY 2009	FY 2010		
Congressional Add: GBI Vendor Base Sustainment FY 2009 Accomplishments: NA FY 2010 Plans: Initiate early purchase of refurbishment parts and motor sets for additional Ground Based Interceptors, mitigating manufacturing restart costs of the select group of warm Ground Based Interceptor 3rd and 4th tier suppliers								0.000	50.000		
Congressional Adds Subtotals								40.000	50.000		
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• 0603175C: Ballistic Missile Defense Technology	117.602	189.229	132.220	0.000	132.220	236.875	239.873	197.118	197.852	0	1,310.769
• 0603881C: Ballistic Missile Defense Terminal Defense Segment	951.414	715.732	436.482	0.000	436.482	250.275	336.711	500.983	521.717	0	3,713.314
• 0603883C: Ballistic Missile Defense Boost Defense Segment	384.365	182.317	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	566.682
• 0603884C: Ballistic Missile Defense Sensors	682.754	621.017	454.859	0.000	454.859	469.589	681.397	650.525	616.342	0	4,176.483
• 0603886C: Ballistic Missile Defense System Interceptor	308.869	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	308.869
• 0603888C: Ballistic Missile Defense Test and Targets	906.952	823.333	1,113.425	0.000	1,113.425	1,105.959	951.371	871.929	829.608	0	6,602.577
	402.776	358.751	402.769	0.000	402.769	468.673	457.745	473.871	488.799	0	3,053.384

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0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)				PE 0603882C: Ballistic Missile Defense Mid-Course Segment				CX08: Ground Based Midcourse Defense (GMD) Block 3.0			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• 0603890C: Ballistic Missile Defense Enabling Programs											
• 0603891C: SPECIAL PROGRAMS - MDA	182.998	250.185	270.189	0.000	270.189	269.040	450.645	517.486	601.315	0	2,541.858
• 0603892C: BMD AEGIS	1,054.323	1,435.717	1,467.278	0.000	1,467.278	1,021.878	1,112.668	1,076.739	923.316	0	8,091.919
• 0603893C: SPACE TRACKING & SURVEILLANCE SYSTEM	209.831	161.609	112.678	0.000	112.678	98.500	56.424	52.928	34.661	0	726.631
• 0603894C: MULTIPLE KILL VEHICLE	226.027	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	226.027
• 0603895C: BMD SYSTEM SPACE PROGRAM	23.250	12.492	10.942	0.000	10.942	11.182	11.347	11.749	12.155	0	93.117
• 0603896C: BMD C2BMC	275.174	334.734	342.625	0.000	342.625	364.085	289.778	323.922	298.936	0	2,229.254
• 0603897C: BMD HERCULES	51.629	47.932	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	99.561
• 0603898C: BMD JOINT WARFIGHTER SUPPORT	66.283	61.098	68.726	0.000	68.726	62.239	63.451	65.158	67.231	0	454.186
• 0603901C: DIRECTED ENERGY RESEARCH	0.000	0.000	98.688	0.000	98.688	101.371	103.449	104.572	104.141	0	512.221
• 0603904C: MISSILE DEFENSE INTEGRATION & OPERATIONS CENTER (MDIOC)	102.823	86.483	86.198	0.000	86.198	88.181	78.517	80.410	83.087	0	605.699
• 0603906C: REGARDING TRENCH	3.159	6.130	7.529	0.000	7.529	8.295	8.286	8.479	8.675	0	50.553
• 0603907C: SEA BASED X-BAND RADAR (SBX)	143.878	167.153	153.056	0.000	153.056	150.104	159.832	160.163	197.099	0	1,131.285
• 0603908C: BMD EUROPEAN INTERCEPTOR SITE	348.722	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	348.722
• 0603909C: BMD EUROPEAN MIDCOURSE RADAR	73.728	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	73.728
	0.000	50.226	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	50.226

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C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• 0603911C: BMD EUROPEAN CAPABILITY											
• 0603912C: BMD European Comm Support	26.016	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	26.016
• 0603913C: ISRAELI COOPERATIVE	0.000	201.323	121.735	0.000	121.735	111.100	113.101	116.114	119.172	0	782.545
• 0604880C: LAND-BASED SM-3	0.000	0.000	281.378	0.000	281.378	345.937	187.062	93.456	139.595	0	1,047.428
• 0604881C: Aegis SM-3 BLOCK IIA CO-DEVELOPMENT	0.000	255.987	318.800	0.000	318.800	405.500	416.300	337.300	227.500	0	1,961.387
• 0604883C: PRECISION TRACKING SPACE SYSTEM	0.000	0.000	66.969	0.000	66.969	123.851	184.800	348.360	482.952	0	1,206.932
• 0604884C: AIRBORNE INFRARED (ABIR)	0.000	0.000	111.671	0.000	111.671	103.636	123.591	103.668	58.773	0	501.339
• 0605502C: Small Business Innovative Research BMDO	124.788	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	124.788
• 0901585C: Pentagon Reservation	20.146	19.709	20.482	0.000	20.482	0.000	0.000	0.000	0.000	0	60.337
• 0901598C: Management Headquarters-MDA	87.151	52.403	29.754	0.000	29.754	29.421	29.974	30.567	31.171	0	290.441
D. Acquisition Strategy											
The Ground Based Midcourse Defense program will continue to follow the Missile Defense Agency`s capability-based acquisition strategy that emphasizes testing, development, and evolutionary acquisition through incremental development. The Agency has structured the missile defense acquisition strategy to continually provide needed upgrades to the Ground Based Midcourse Defense system components within authorized funding availability. This process minimizes the risk of obsolescence, provides opportunities for standards updates, and allows decision makers to make informed trades between cost, schedule, and performance while exploring operational and technological possibilities.											
In Fiscal Year 2011 Ground Based Midcourse Defense will award a competitive Development and Sustainment Contract (DSC) for future development; fielding; test; systems engineering, integration and configuration management; equipment manufacturing and refurbishment; training, and operations and sustainment support for the Ground Based Midcourse Defense system and associated support facilities. This competition based acquisition approach will incorporate current contracts with											

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<p>the DSC, emphasizes application of performance based tenets to establish long term relationships which provide timely high quality support of the core Ground Based Midcourse Defense weapons system while reducing life cycle and long-term ownership costs. The Ground Based Midcourse Defense competitive acquisition approach will help minimize the risk of obsolescence, provide opportunities for periodic weapons system refresh, and allow decision makers to make informed trades between cost, schedule, and performance while exploring operational and technological possibilities.</p> <p>Additionally, Missile Defense Agency will transition from the existing legacy, project-oriented Systems Engineering and Technical Assistance (SETA) contractor construct to an Missile Defense Agency enterprise-wide Advisory and Assistance Services (A&AS) approach to support the Ballistic Missile Defense System mission. The objectives are to implement national engineering and support services for the Ballistic Missile Defense System mission across the Missile Defense Agency enterprise and Ground Based Midcourse Defense , enhance the sharing of ballistic missile defense expertise and knowledge across the agency, centralize the acquisition of support services manpower in a more efficient manner and reduce agency overhead costs enterprise-wide. A&AS support for Ground Based Midcourse Defense will include engineering and technical services; studies, analyses, and evaluation; and management and professional services.</p> <p><u>E. Performance Metrics</u> NA</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency											DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)					R-1 ITEM NOMENCLATURE PE 0603882C: Ballistic Missile Defense Mid-Course Segment				PROJECT CX08: Ground Based Midcourse Defense (GMD) Block 3.0				
Product Development (\$ in Millions)													
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Ground Systems Fort Greely Missile Field 2 CX08	SS/CPAF	Boeing AL/AK/AZ/CA/CO/VA	223.701	13.200	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
Ground Systems Fort Greely Future Power Plant CX08	SS/CPAF	Boeing AL/AK/AZ/CA/CO/VA	119.107	0.000	Jul 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
Ground Systems Ground Systems Software Build 6 CX08	SS/CPAF	Boeing AL/AK/AZ/CA/CO/VA	33.160	0.000	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
Ground Systems Near Term Discrimination CX08	SS/CPAF	Boeing AL/AK/AZ/CA/CO/VA	4.354	0.000	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
Ground Systems Ground Systems Software for Flight Test CX08	SS/CPAF	Boeing AL/AK/AZ/CA/CO/VA	0.000	30.846	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
Ground Systems Long Haul Communications Transition to DISA CX08	TBD/TBD	MDA DISA	0.000	26.000	Oct 2009	0.000		0.000		0.000	Continuing	Continuing	Continuing
Ground Based Interceptor Ground Based Interceptors 31-38 CX08	SS/CPAF	AL/AK/AZ CA/CO/TX/VA	119.600	112.641	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
Ground Based Interceptor Ground Based Interceptors 39-44 CX08	SS/CPAF	AL/AK/AZ CA/CO/TX/VA	60.632	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
	SS/CPAF	Boeing	49.098	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing

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0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)					PE 0603882C: Ballistic Missile Defense Mid-Course Segment				CX08: Ground Based Midcourse Defense (GMD) Block 3.0				
Product Development (\$ in Millions)													
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Ground Based Interceptor Ground Based Interceptor Exoatmospheric Kill Vehicle Manufacturing Restart CX08		AL/AZ/CA											
Ground Based Interceptor Ground Based Interceptor Exoatmospheric Kill Vehicle Manufacturing Minimum Production CX08	SS/CPAF	Boeing AL/AZ/CA	28.380	79.712		0.000		0.000		0.000	Continuing	Continuing	Continuing
Ground Based Interceptor Ground Based Interceptor Exoatmospheric Kill Vehicle/Orbital Boost Vehicle Development CX08	SS/CPAF	Boeing AL/AZ/CA	18.272	3.241		0.000		0.000		0.000	Continuing	Continuing	Continuing
Ground Based Interceptor Ground Based Interceptor Refurbishment CX08	SS/CPAF	Boeing/AL/AK/AZ/CA CO/TX/VA	21.384	0.622	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
Ground Based Interceptor Test Interceptors CX08	SS/CPAF	Boeing/AL/AK/AZ/CA CO/TX/VA	71.402	15.020	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
	SS/CPAF	Boeing	12.900	0.000		0.000		0.000		0.000	0	12.900	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency											DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE					PROJECT			
0400: Research, Development, Test & Evaluation, Defense-Wide					PE 0603882C: Ballistic Missile Defense Mid-Course Segment					CX08: Ground Based Midcourse Defense (GMD) Block 3.0			
BA 4: Advanced Component Development & Prototypes (ACD&P)													
Product Development (\$ in Millions)													
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
GMD Upgrades and Enhancements Improve Operational Availability CX08		AL/AK/AZ/CA/CO/TX/VA											
GMD Upgrades and Enhancements Ground Based Midcourse Defense Remote Workstations/Cheyenne Mountain Directorate CX08	SS/CPAF	Boeing AL/CO	6.000	0.000		0.000		0.000		0.000	0	6.000	Continuing
GMD Upgrades and Enhancements Ground Based Interceptor Communication Link System CX08	SS/CPAF	Boeing AZ/AL/CA/CO	13.600	0.000		0.000		0.000		0.000	0	13.600	Continuing
GMD Upgrades and Enhancements Fort Greely, Alaska Security CX08	TBD/TBD	Army/DOE AL/AK/NV	7.500	0.000		0.000		0.000		0.000	0	7.500	Continuing
GBI Vendor Base Sustainment Ground Based Interceptor Vendor Base Sustainment CX08	SS/CPAF	AL/AK/AZ/CA/CO/TX/VA	0.000	50.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Subtotal			789.090	331.282		0.000		0.000		0.000			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency											DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE				PROJECT				
0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)					PE 0603882C: Ballistic Missile Defense Mid-Course Segment				CX08: Ground Based Midcourse Defense (GMD) Block 3.0				
Product Development (\$ in Millions)													
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Remarks													
NA													
Support (\$ in Millions)													
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Ground Systems Ground Systems Prime Program Support CX08	SS/CPAF	Boeing AL/AK/AZ/CA/CO/TX/VA	25.698	21.339	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
Program Management Program Management CX08	SS/CPAF	Boeing AL/AK/AZ/CA/CO/TX/VA	87.727	71.588	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
Program Management Govt Civilian Salaries CX08	TBD/TBD	MDA AL/VA	28.300	24.800	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
Program Management FFRDC Support CX08	TBD/TBD	MIT/LL AL/VA/CO	4.100	6.321	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
Program Management Other Govt Agencies CX08	TBD/TBD	Various AL/VA/FL/CO	6.300	5.500	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
Program Management Contract Support Services CX08	C/CPAF	CSC LTAP AL/VA/CO/AK	61.750	65.908	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency											DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)					R-1 ITEM NOMENCLATURE PE 0603882C: Ballistic Missile Defense Mid-Course Segment				PROJECT CX08: Ground Based Midcourse Defense (GMD) Block 3.0				
Support (\$ in Millions)													
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management DPW World-Wide Support CX08	TBD/TBD	MDA DPW AL	18.863	6.195	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
Program Management Safety and Quality CX08	C/CPAF	Boeing AL/AK/AZ/CA/CO/TX/VA	5.824	1.272	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
Program Management Ballistic Missile Defense System Engineering Change Proposals CX08	TBD/TBD	MDA -	0.000	2.996	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
Element Engineering and Integration Ballistic Missile Defense System Hardware-In-The-Loop CX08	TBD/TBD	MDA -	0.000	34.145	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
Element Engineering and Integration Test Infrastructure CX08	SS/CPAF	Boeing AL/AK/AZ/CA/CO/TX/VA	25.208	5.947	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
Element Engineering and Integration Modeling and Simulation CX08	SS/CPAF	Boeing AL/AK/AZ/CA/CO/TX/VA	30.990	8.798	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
Element Engineering and Integration System Engineering and Integration CX08	SS/CPAF	Boeing AL/AK/AZ/CA/CO/TX/VA	51.270	54.067	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
Element Engineering and Integration Mission	SS/CPAF	Boeing	11.875	16.266	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency											DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)					R-1 ITEM NOMENCLATURE PE 0603882C: Ballistic Missile Defense Mid-Course Segment				PROJECT CX08: Ground Based Midcourse Defense (GMD) Block 3.0					
Support (\$ in Millions)														
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Assurance Category 1 Information Assurance CX08		AL/AK/AZ/CA/CO/VA/NG/MA												
Element Engineering and Integration Ballistic Missile Defense System Common Threat CX08	TBD/TBD	MDA -	3.293	3.386	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing	
Ground Based Interceptor Ground Based Interceptor Prime Program Support CX08	SS/CPAF	AL/AK/AZ/CA CO/TX/VA	81.390	65.424	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing	
Subtotal			442.588	393.952		0.000		0.000		0.000				
Remarks NA														
Test and Evaluation (\$ in Millions)														
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
BMDS Level Testing Element Readiness Test Costs CX08	C/CPAF	Boeing AL/AK/AZ/CA/CO/TX/VA	13.626	0.000	Jul 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing	
	TBD/TBD	VAFB/CA	21.944	17.172	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing	

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency											DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense Mid-Course Segment</i>				PROJECT CX08: <i>Ground Based Midcourse Defense (GMD) Block 3.0</i>					
 Test and Evaluation (\$ in Millions)													
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
BMDS Level Testing Flight Test Range Costs CX08		PRST/HI											
BMDS Level Testing Test Software & Labs CX08	C/CPAF	Boeing AL/AK/AZ/CA/CO/TX/VA	48.406	19.796	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
BMDS Level Testing Flight Test Planning, Analysis & Execution CX08	C/CPAF	Boeing AL/AK/AZ/CA/CO/TX/VA	49.142	26.105	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
BMDS Level Testing Infrastructure Support CX08	C/CPAF	Boeing AL/AK/AZ/CA/CO/TX/VA	16.281	22.211	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
Subtotal			149.399	85.284		0.000		0.000		0.000			
Remarks NA													
 Management Services (\$ in Millions)													
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			0.000	0.000		0.000		0.000		0.000			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency											DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense Mid-Course Segment</i>				PROJECT CX08: <i>Ground Based Midcourse Defense (GMD) Block 3.0</i>					
Management Services (\$ in Millions)													
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Remarks NA													
			Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			1,381.077	810.518		0.000		0.000		0.000			
Remarks NA													

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Exhibit R-4, RDT&E Schedule Profile: PB 2011 Missile Defense Agency

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

0400: Research, Development, Test & Evaluation, Defense-Wide
BA 4: Advanced Component Development & Prototypes (ACD&P)

R-1 ITEM NOMENCLATURE

PE 0603882C: Ballistic Missile Defense Mid-Course Segment

PROJECT

CX08: Ground Based Midcourse Defense (GMD) Block 3.0

	FY 2009				FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Fast Shield II		■																										
Ground Based Midcourse Defense Fire Control 6C/Command Launch Equipment 4.3 (Full Qualification Test) (Test Only)		■																										
10 Silos Fabrication (Fort Greely, Alaska Missile Field - 2)		■	■																									
Ground Based Interceptor Refurbishment 7R				■																								
Ground Based Interceptor Refurbishment 15R				■																								
Flight Test Ground Based Midcourse Defense-06 (Ground Based Interceptor)				■																								
Ground Test Focused-03e (Ballistic Missile Defense System Strategic Hardware-In-The-Loop Test)				■																								
Ground Systems 6B.1.5					■																							
Flight Test Ground Based Midcourse Defense-06 (Intercept Flight Test)						■																						
Ground Based Interceptor Refurbishment 17R						■																						
Ground Test Focused -04b (Full Ballistic Missile Defense System Hardware-In-The-Loop Test)						■																						
Ground Based Interceptor Refurbishment 24R						■																						
							■																					

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APPROPRIATION/BUDGET ACTIVITY
0400: *Research, Development, Test & Evaluation, Defense-Wide*
BA 4: *Advanced Component Development & Prototypes (ACD&P)*

R-1 ITEM NOMENCLATURE
PE 0603882C: *Ballistic Missile Defense Mid-Course Segment*

PROJECT
CX08: *Ground Based Midcourse Defense*
(GMD) Block 3.0

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Exhibit R-4A, RDT&E Schedule Details: PB 2011 Missile Defense Agency			DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense Mid-Course Segment</i>	PROJECT CX08: <i>Ground Based Midcourse Defense (GMD) Block 3.0</i>	

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Fast Shield II	2	2009	2	2009
Ground Based Midcourse Defense Fire Control 6C/Command Launch Equipment 4.3 (Full Qualification Test) (Test Only)	2	2009	2	2009
10 Silos Fabrication (Fort Greely, Alaska Missile Field - 2)	2	2009	3	2009
Ground Based Interceptor Refurbishment 7R	4	2009	4	2009
Ground Based Interceptor Refurbishment 15R	4	2009	4	2009
Flight Test Ground Based Midcourse Defense-06 (Ground Based Interceptor)	4	2009	4	2009
Ground Test Focused-03e (Ballistic Missile Defense System Strategic Hardware-In-The-Loop Test)	4	2009	4	2009
Ground Systems 6B.1.5	1	2010	1	2010
Flight Test Ground Based Midcourse Defense-06 (Intercept Flight Test)	2	2010	2	2010
Ground Based Interceptor Refurbishment 17R	2	2010	2	2010
Ground Test Focused -04b (Full Ballistic Missile Defense System Hardware-In-The-Loop Test)	2	2010	2	2010
Ground Based Interceptor Refurbishment 24R	2	2010	2	2010
Booster Verification Test-01 Ground Based Interceptor w/Exoatmospheric Kill Vehicle (PE 0603911C)	3	2010	3	2010
Grond Based Interceptors 31-33	3	2010	4	2010
Ground Test Focused-04c (Full Ballistic Missile Defense System Distributed Test)	4	2010	4	2010
Flight Test Experiment-10 (Cobra Dane Tracking Test)	4	2010	4	2010

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Exhibit R-4A, RDT&E Schedule Details: PB 2011 Missile Defense Agency			DATE: February 2010	
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense Mid-Course Segment</i>	PROJECT CX08: <i>Ground Based Midcourse Defense (GMD) Block 3.0</i>		

Event	Start		End	
	Quarter	Year	Quarter	Year
Fort Greely, Alaska Power Plant	4	2010	4	2010

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency									DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)				R-1 ITEM NOMENCLATURE PE 0603882C: Ballistic Missile Defense Mid-Course Segment				PROJECT WX08: GM Capability Development			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
WX08: GM Capability Development	0.000	3.834	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	3.834
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		
Note In accordance with the Missile Defense Agency revised budget structure, the content previously planned in Projects AX08, CX08, WX08 and XX08 in the FY 2009-FY 2010 budget submissions are now captured in Project MD08 for FY2011 - 2015.											
A. Mission Description and Budget Item Justification Project WX08 funds Ground Based Midcourse Defense support of Ballistic Missile Defense System architecture developments, in particular, to provide a pervasive queuing with overhead IR sensors, with a focus on regional defense scenarios. This concept addresses the goals of enabling earlier interceptor commit and earlier intercepts. Threat Systems Engineering supports the planning, design and specification, integration and implementation, and test verification and assessment phases of the systems engineering process. The Threat Systems Engineering uses intelligence community data to define the Ballistic Missile Defense System threat space and directly supports the development of the Ballistic Missile Defense System Description Document and System and Element Specifications. This threat space is documented in the Adversary Data Packages (ADP), which includes common and consistent representation of Missile Systems and countermeasures to drive Ballistic Missile Defense System requirements, designs, and directly supports the execution of Integrated Master Test Plan (i.e. flight test targets, ground tests & digital simulations, and pre-mission analysis). Threat Systems Engineering also develops scenarios (trajectory and signature) for system and element utilization for compliance and assessment evaluations of Ballistic Missile Defense System capability to defend homeland, deployed forces, and friends and allies.											
B. Accomplishments/Planned Program (\$ in Millions)											
							FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
OPIR Development See Description Below							0.000	3.834	0.000	0.000	0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency									DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)				R-1 ITEM NOMENCLATURE PE 0603882C: Ballistic Missile Defense Mid-Course Segment				PROJECT WX08: GM Capability Development			
B. Accomplishments/Planned Program (\$ in Millions)											
						FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	
FY 2009 Accomplishments:											
FY 2010 Plans: Determine and characterize Overhead Persistent Infrared (OPIR) interface requirements Execute initial development of regionally-tailored OPIR processing and connectivity; assess for performance via simulation											
FY 2011 Base Plans:											
FY 2011 OCO Plans: NA											
Accomplishments/Planned Programs Subtotals						0.000	3.834	0.000	0.000	0.000	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• 0603175C: Ballistic Missile Defense Technology	117.602	189.229	132.220	0.000	132.220	236.875	239.873	197.118	197.852	0	1,310.769
• 0603881C: Ballistic Missile Defense Terminal Defense Segment	951.414	715.732	436.482	0.000	436.482	250.275	336.711	500.983	521.717	0	3,713.314
• 0603883C: Ballistic Missile Defense Boost Defense Segment	384.365	182.317	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	566.682
• 0603884C: Ballistic Missile Defense Sensors	682.754	621.017	454.859	0.000	454.859	469.589	681.397	650.525	616.342	0	4,176.483
• 0603886C: Ballistic Missile Defense System Interceptor	308.869	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	308.869
	906.952	823.333	1,113.425	0.000	1,113.425	1,105.959	951.371	871.929	829.608	0	6,602.577

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency									DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE				PROJECT			
0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)				PE 0603882C: Ballistic Missile Defense Mid-Course Segment				WX08: GM Capability Development			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• 0603888C: Ballistic Missile Defense Test and Targets											
• 0603890C: Ballistic Missile Defense Enabling Programs	402.776	358.751	402.769	0.000	402.769	468.673	457.745	473.871	488.799	0	3,053.384
• 0603891C: SPECIAL PROGRAMS - MDA	182.998	250.185	270.189	0.000	270.189	269.040	450.645	517.486	601.315	0	2,541.858
• 0603892C: BMD AEGIS	1,054.323	1,435.717	1,467.278	0.000	1,467.278	1,021.878	1,112.668	1,076.739	923.316	0	8,091.919
• 0603893C: SPACE TRACKING & SURVEILLANCE SYSTEM	209.831	161.609	112.678	0.000	112.678	98.500	56.424	52.928	34.661	0	726.631
• 0603894C: MULTIPLE KILL VEHICLE	226.027	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	226.027
• 0603895C: BMD SYSTEM SPACE PROGRAM	23.250	12.492	10.942	0.000	10.942	11.182	11.347	11.749	12.155	0	93.117
• 0603896C: BMD C2BMC	275.174	334.734	342.625	0.000	342.625	364.085	289.778	323.922	298.936	0	2,229.254
• 0603897C: BMD HERCULES	51.629	47.932	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	99.561
• 0603898C: BMD JOINT WARFIGHTER SUPPORT	66.283	61.098	68.726	0.000	68.726	62.239	63.451	65.158	67.231	0	454.186
• 0603901C: DIRECTED ENERGY RESEARCH	0.000	0.000	98.688	0.000	98.688	101.371	103.449	104.572	104.141	0	512.221
• 0603904C: MISSILE DEFENSE INTEGRATION & OPERATIONS CENTER (MDIOC)	102.823	86.483	86.198	0.000	86.198	88.181	78.517	80.410	83.087	0	605.699
• 0603906C: REGARDING TRENCH	3.159	6.130	7.529	0.000	7.529	8.295	8.286	8.479	8.675	0	50.553
• 0603907C: SEA BASED X-BAND RADAR (SBX)	143.878	167.153	153.056	0.000	153.056	150.104	159.832	160.163	197.099	0	1,131.285
• 0603908C: BMD EUROPEAN INTERCEPTOR SITE	348.722	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	348.722
	73.728	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	73.728

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency									DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)				R-1 ITEM NOMENCLATURE PE 0603882C: Ballistic Missile Defense Mid-Course Segment				PROJECT WX08: GM Capability Development			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• 0603909C: BMD EUROPEAN MIDCOURSE RADAR											
• 0603911C: BMD EUROPEAN CAPABILITY	0.000	50.226	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	50.226
• 0603912C: BMD European Comm Support	26.016	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	26.016
• 0603913C: ISRAELI COOPERATIVE	0.000	201.323	121.735	0.000	121.735	111.100	113.101	116.114	119.172	0	782.545
• 0604880C: LAND-BASED SM-3	0.000	0.000	281.378	0.000	281.378	345.937	187.062	93.456	139.595	0	1,047.428
• 0604881C: Aegis SM-3 BLOCK IIA CO-DEVELOPMENT	0.000	255.987	318.800	0.000	318.800	405.500	416.300	337.300	227.500	0	1,961.387
• 0604883C: PRECISION TRACKING SPACE SYSTEM	0.000	0.000	66.969	0.000	66.969	123.851	184.800	348.360	482.952	0	1,206.932
• 0604884C: AIRBORNE INFRARED (ABIR)	0.000	0.000	111.671	0.000	111.671	103.636	123.591	103.668	58.773	0	501.339
• 0605502C: Small Business Innovative Research BMDO	124.788	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	124.788
• 0901585C: Pentagon Reservation	20.146	19.709	20.482	0.000	20.482	0.000	0.000	0.000	0.000	0	60.337
• 0901598C: Management Headquarters-MDA	87.151	52.403	29.754	0.000	29.754	29.421	29.974	30.567	31.171	0	290.441
D. Acquisition Strategy											
The Overhead Persistent Infrared (OPIR) development will be accomplished by a cooperative program between Missile Defense Agency Elements using a performance based approach that ties program approval decisions to knowledge point accomplishment associated with incorporating advanced sensors to achieve OPIR track utilization including regional assets. The program will use existing Missile Defense Agency Federally Funded Research and Development Centers, Contract Support Services and other agency contracts.											
E. Performance Metrics											
NA											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense Mid-Course Segment</i>	PROJECT WX08: <i>GM Capability Development</i>
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Product Development (\$ in Millions)

				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
OPIR Development Overhead Persistent Infrared Development WX08	C/Various	To be competed among Industry -	0.000	3.834		0.000		0.000		0.000	Continuing	Continuing	Continuing
Subtotal			0.000	3.834		0.000		0.000		0.000			

Remarks

NA

Support (\$ in Millions)

				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			0.000	0.000		0.000		0.000		0.000			

Remarks

NA

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency											DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense Mid-Course Segment</i>				PROJECT WX08: <i>GM Capability Development</i>					
Test and Evaluation (\$ in Millions)													
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			0.000	0.000		0.000		0.000		0.000			
Remarks NA													
Management Services (\$ in Millions)													
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			0.000	0.000		0.000		0.000		0.000			
Remarks NA													
			Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	3.834		0.000		0.000		0.000			
Remarks NA													

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Exhibit R-4, RDT&E Schedule Profile: PB 2011 Missile Defense Agency																DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>								R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense Mid-Course Segment</i>								PROJECT WX08: <i>GM Capability Development</i>			

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Exhibit R-4A, RDT&E Schedule Details: PB 2011 Missile Defense Agency			DATE: February 2010	
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>		R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense Mid-Course Segment</i>		PROJECT WX08: <i>GM Capability Development</i>

Schedule Details

Event	Start		End	
	Quarter	Year	Quarter	Year
Upgrade Hardware & Software Framework	1	2010	2	2010
Integrate Improved Overhead Persistent Infrared Sensors	1	2010	4	2010
Begin Construction of Modeling & Simulation Environment	1	2010	4	2010
Demonstrate Cue for Launch-On Remote with OPIR Data	3	2010	4	2010

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency								DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense Mid-Course Segment</i>				PROJECT XX08: <i>Ground Based Midcourse Defense (GMD) Sustainment</i>			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
XX08: <i>Ground Based Midcourse Defense (GMD) Sustainment</i>	249.519	194.297	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	443.816
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		
<p>Note</p> <p>In accordance with the Missile Defense Agency revised budget structure, the content previously planned in Projects AX08, CX08, WX08 and XX08 in the FY 2009-FY 2010 budget submissions are now captured in Project MD08 for FY2011 - 2015.</p> <p>A. Mission Description and Budget Item Justification</p> <p>This project provides for the operations and sustainment of Ground Based Midcourse Defense fielded capabilities. This project also includes Base Operations support costs and delivery of Government Furnished Material and Services in support of the Prime Contract. The Ground Based Midcourse Defense Prime contractor and subcontractors will provide monitoring, diagnostics and maintenance of the fielded Ground Based Midcourse Defense components. Operations and sustainment efforts include:</p> <p>The continued development and validation of maintenance procedures. Tracking of repair parts stock levels. 24 hours a day, 7 days a week, 365 days a year monitoring and maintenance at Vandenberg AFB, Fort Greely, the Missile Defense Integration Operations Center (MDIOC) in Colorado Springs, and across the nation-wide Ground Based Midcourse Defense Communication Network (Ground Based Midcourse Defense Communications Network). Delivery of essential Government Furnished Material and Services to ensure Prime Contract performance. Base Operations Support at Vandenberg AFB, CA; Fort Greely, AK; and Colorado Springs, CO. Upgrade and maintain security system at Fort Greely, AK. Developing a competitive logistics acquisition strategy for follow-on maintenance.</p> <p>B. Accomplishments/Planned Program (\$ in Millions)</p>											

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency				DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)		R-1 ITEM NOMENCLATURE PE 0603882C: Ballistic Missile Defense Mid-Course Segment		PROJECT XX08: Ground Based Midcourse Defense (GMD) Sustainment		
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Operations and Sustainment See Description Below FY 2009 Accomplishments: Provided Ground Based Midcourse Defense Element operations and sustainment for Primary Mission Equipment (PME), support equipment, and operational facilities at Fort Greely, AK; Colorado Springs, CO; and Vandenberg Air Force Base, CA. Continued minimal spare replenishment through improved logistics repair analysis captured through performance metrics. Continued on-site sustaining engineering, ensuring logistics analysis is incorporated in technical data products. Continued stockpile reliability and component aging testing. Continued to develop and field System Level Ground Based Midcourse Defense Technical Manuals; update training materials and sustainment training packages to maintain operational and maintenance crew proficiency. Initiated Performance Based Logistics (PBL) acquisition strategy. FY 2010 Plans: Provide GMD Element operations and sustainment for PME, support equipment, and operational facilities at Fort Greely, AK; Colorado Springs, CO; and Vandenberg Air Force Base, CA. Continue minimal spare replenishment through improved logistics repair analysis captured through performance metrics. Continue on-site sustaining engineering, ensuring logistics analysis is incorporated in technical data products. Continue stockpile reliability and component aging testing. Continue to develop and field System Level Ground Based Midcourse Defense technical manuals and update training materials to maintain crew proficiency.		249.519	194.297	0.000	0.000	0.000

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency									DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)				R-1 ITEM NOMENCLATURE PE 0603882C: Ballistic Missile Defense Mid-Course Segment				PROJECT XX08: Ground Based Midcourse Defense (GMD) Sustainment			
B. Accomplishments/Planned Program (\$ in Millions)											
						FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	
FY 2011 Base Plans: NA											
FY 2011 OCO Plans: NA											
Accomplishments/Planned Programs Subtotals						249.519	194.297	0.000	0.000	0.000	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• 0603175C: Ballistic Missile Defense Technology	117.602	189.229	132.220	0.000	132.220	236.875	239.873	197.118	197.852	0	1,310.769
• 0603881C: Ballistic Missile Defense Terminal Defense Segment	951.414	715.732	436.482	0.000	436.482	250.275	336.711	500.983	521.717	0	3,713.314
• 0603883C: Ballistic Missile Defense Boost Defense Segment	384.365	182.317	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	566.682
• 0603884C: Ballistic Missile Defense Sensors	682.754	621.017	454.859	0.000	454.859	469.589	681.397	650.525	616.342	0	4,176.483
• 0603886C: Ballistic Missile Defense System Interceptor	308.869	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	308.869
• 0603888C: Ballistic Missile Defense Test and Targets	906.952	823.333	1,113.425	0.000	1,113.425	1,105.959	951.371	871.929	829.608	0	6,602.577
• 0603890C: Ballistic Missile Defense Enabling Programs	402.776	358.751	402.769	0.000	402.769	468.673	457.745	473.871	488.799	0	3,053.384
• 0603891C: SPECIAL PROGRAMS - MDA	182.998	250.185	270.189	0.000	270.189	269.040	450.645	517.486	601.315	0	2,541.858

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency									DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE				PROJECT			
0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)				PE 0603882C: Ballistic Missile Defense Mid-Course Segment				XX08: Ground Based Midcourse Defense (GMD) Sustainment			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• 0603892C: BMD AEGIS	1,054.323	1,435.717	1,467.278	0.000	1,467.278	1,021.878	1,112.668	1,076.739	923.316	0	8,091.919
• 0603893C: SPACE TRACKING & SURVEILLANCE SYSTEM	209.831	161.609	112.678	0.000	112.678	98.500	56.424	52.928	34.661	0	726.631
• 0603894C: MULTIPLE KILL VEHICLE	226.027	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	226.027
• 0603895C: BMD SYSTEM SPACE PROGRAM	23.250	12.492	10.942	0.000	10.942	11.182	11.347	11.749	12.155	0	93.117
• 0603896C: BMD C2BMC	275.174	334.734	342.625	0.000	342.625	364.085	289.778	323.922	298.936	0	2,229.254
• 0603897C: BMD HERCULES	51.629	47.932	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	99.561
• 0603898C: BMD JOINT WARFIGHTER SUPPORT	66.283	61.098	68.726	0.000	68.726	62.239	63.451	65.158	67.231	0	454.186
• 0603901C: DIRECTED ENERGY RESEARCH	0.000	0.000	98.688	0.000	98.688	101.371	103.449	104.572	104.141	0	512.221
• 0603904C: MISSILE DEFENSE INTEGRATION & OPERATIONS CENTER (MDIOC)	102.823	86.483	86.198	0.000	86.198	88.181	78.517	80.410	83.087	0	605.699
• 0603906C: REGARDING TRENCH	3.159	6.130	7.529	0.000	7.529	8.295	8.286	8.479	8.675	0	50.553
• 0603907C: SEA BASED X-BAND RADAR (SBX)	143.878	167.153	153.056	0.000	153.056	150.104	159.832	160.163	197.099	0	1,131.285
• 0603908C: BMD EUROPEAN INTERCEPTOR SITE	348.722	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	348.722
• 0603909C: BMD EUROPEAN MIDCOURSE RADAR	73.728	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	73.728
• 0603911C: BMD EUROPEAN CAPABILITY	0.000	50.226	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	50.226
• 0603912C: BMD European Comm Support	26.016	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	26.016
	0.000	201.323	121.735	0.000	121.735	111.100	113.101	116.114	119.172	0	782.545

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency									DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)				R-1 ITEM NOMENCLATURE PE 0603882C: Ballistic Missile Defense Mid-Course Segment				PROJECT XX08: Ground Based Midcourse Defense (GMD) Sustainment			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• 0603913C: ISRAELI COOPERATIVE											
• 0604880C: LAND-BASED SM-3	0.000	0.000	281.378	0.000	281.378	345.937	187.062	93.456	139.595	0	1,047.428
• 0604881C: Aegis SM-3 BLOCK IIA CO-DEVELOPMENT	0.000	255.987	318.800	0.000	318.800	405.500	416.300	337.300	227.500	0	1,961.387
• 0604883C: PRECISION TRACKING SPACE SYSTEM	0.000	0.000	66.969	0.000	66.969	123.851	184.800	348.360	482.952	0	1,206.932
• 0604884C: AIRBORNE INFRARED (ABIR)	0.000	0.000	111.671	0.000	111.671	103.636	123.591	103.668	58.773	0	501.339
• 0605502C: Small Business Innovative Research BMDO	124.788	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	124.788
• 0901585C: Pentagon Reservation	20.146	19.709	20.482	0.000	20.482	0.000	0.000	0.000	0.000	0	60.337
• 0901598C: Management Headquarters-MDA	87.151	52.403	29.754	0.000	29.754	29.421	29.974	30.567	31.171	0	290.441
D. Acquisition Strategy											
<p>The Ground Based Midcourse Defense (Ground Based Midcourse Defense) program will continue to follow the Missile Defense Agency’s capability-based acquisition strategy that emphasizes testing, development, and evolutionary acquisition through incremental development. The Agency has structured the missile defense acquisition strategy to continually provide needed upgrades to the Ground Based Midcourse Defense system components within authorized funding availability. This process minimizes the risk of obsolescence, provides opportunities for standards updates, and allows decision makers to make informed trades between cost, schedule, and performance while exploring operational and technological possibilities. Beginning in Fiscal Year 2011 and for the remainder of the program life cycle, Ground Based Midcourse Defense will incorporate tenets of competitive procurement in the acquisition strategy for all feasible elements of the weapons system. This competition based developmental approach will be enhanced within the Ground Based Midcourse Defense program by additional test infrastructure, improved test management, and improved models and simulations that enhance Ground Based Midcourse Defense `s ability to test in more complex and operationally realistic test environments earlier than the standard acquisition process.</p> <p>Additionally, Missile Defense Agency will transition from the existing legacy, project-oriented Systems Engineering and Technical Assistance (SETA) contractor construct to an Missile Defense Agency enterprise-wide Advisory and Assistance Services (A&AS) approach to support the Ballistic Missile Defense System mission. The objectives are to implement national engineering and support services for the Ballistic Missile Defense System mission across the Missile Defense Agency</p>											

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency		DATE: February 2010
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense Mid-Course Segment</i>	PROJECT XX08: <i>Ground Based Midcourse Defense (GMD) Sustainment</i>
enterprise and Ground Based Midcourse Defense , enhance the sharing of ballistic missile defense expertise and knowledge across the agency, centralize the acquisition of support services manpower in a more efficient manner and reduce agency overhead costs enterprise-wide. A&AS support for Ground Based Midcourse Defense will include engineering and technical services; studies, analyses, and evaluation; and management and professional services.		
<u>E. Performance Metrics</u> NA		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency											DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)				R-1 ITEM NOMENCLATURE PE 0603882C: Ballistic Missile Defense Mid-Course Segment				PROJECT XX08: Ground Based Midcourse Defense (GMD) Sustainment					
Product Development (\$ in Millions)													
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			0.000	0.000		0.000		0.000		0.000			
Remarks NA													
Support (\$ in Millions)													
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Operations and Sustainment Maintenance of Primary System XX08	SS/CPAF	Boeing AL/AK/CA	200.624	69.599	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
Operations and Sustainment Sustaining Support Services XX08	SS/CPAF	Boeing AL/AK/CA	188.979	70.275	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
Operations and Sustainment Operations & Sustainment Repair and Maintenance Personnel XX08	SS/CPAF	Boeing AL/AK/CA	31.106	11.613	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
Operations and Sustainment Inter-Service Support	TBD/TBD	Beale & Others AK	24.182	13.500	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency											DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE				PROJECT				
0400: Research, Development, Test & Evaluation, Defense-Wide					PE 0603882C: Ballistic Missile Defense Mid-Course Segment				XX08: Ground Based Midcourse Defense (GMD) Sustainment				
BA 4: Advanced Component Development & Prototypes (ACD&P)													
Support (\$ in Millions)													
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Agreement (ISA) Leases and Services XX08													
Operations and Sustainment Government Furnished Equipment & Services (GFX) XX08	TBD/TBD	DISA/VA, AMCOM/AL SMDC/AK/AL/HI	9.487	15.810	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
Operations and Sustainment Leases & Services FGA XX08	TBD/TBD	- Ft. Greely, AK	15.289	8.000	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
Operations and Sustainment Leases & Services VAFB/COS XX08	TBD/TBD	Vandenberg AFB COS	19.654	2.500	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing
Operations and Sustainment Logistics Support Projects (RAM-T and other Operational Readiness Improvement Efforts) XX08	TBD/TBD	NSWC Crane, Tobyhana Depot Hill AFB	34.949	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Operations and Sustainment Fort Greely Security Upgrade XX08	TBD/TBD	Sandia National Laboratories -	11.484	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Operations and Sustainment Certification & Accreditation Contract XX08	TBD/TBD	MDA DOC	9.232	3.000	Jan 2010	0.000		0.000		0.000	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency											DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense Mid-Course Segment</i>				PROJECT XX08: <i>Ground Based Midcourse Defense (GMD) Sustainment</i>					
Support (\$ in Millions)													
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			544.986	194.297		0.000		0.000		0.000			
Remarks NA													
Test and Evaluation (\$ in Millions)													
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			0.000	0.000		0.000		0.000		0.000			
Remarks NA													
Management Services (\$ in Millions)													
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			0.000	0.000		0.000		0.000		0.000			

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency											DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense Mid-Course Segment</i>				PROJECT XX08: <i>Ground Based Midcourse Defense (GMD) Sustainment</i>					
Management Services (\$ in Millions)													
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Remarks NA													
			Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			544.986	194.297		0.000		0.000		0.000			
Remarks NA													

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency								DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)				R-1 ITEM NOMENCLATURE PE 0603882C: Ballistic Missile Defense Mid-Course Segment				PROJECT MD08: Ground Based Midcourse			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
MD08: Ground Based Midcourse	0.000	0.000	1,300.655	0.000	1,300.655	1,071.957	1,249.802	1,064.572	996.981	Continuing	Continuing
Quantity of RDT&E Articles	0	0	7	0	7	0	0	0	0		

Note

In accordance with the Missile Defense Agency revised budget structure, the content previously planned in Projects AX08, CX08, WX08 and XX08 in the FY 2009-FY 2010 budget submissions are now captured in Project MD08 for FY2011 - 2015.

A. Mission Description and Budget Item Justification

Project MD08 provides funding for the development and fielding of incremental component capability enhancements to Project CX08.

To counter the Intercontinental Ballistic Missile and Intermediate Range Ballistic Missile threat, the United States deploys Ground-Based Midcourse Defense (Ground Based Midcourse Defense) interceptors in silos at Fort Greely, AK (Fort Greely, Alaska) and Vandenberg Air Force Base, CA (Vandenberg Air Force Base), to defend our Homeland from Intercontinental Ballistic Missile or Intermediate Range Ballistic Missile attack. In Fiscal Year 2010, we will continue the development of long-range Ground Based Midcourse Defense capabilities with missile fields at Fort Greely, Alaska and Vandenberg Air Force Base, where we will maintain 26 and four Ground Based Interceptors, respectively. This work will improve protection of the United States against a limited number of rogue state launches of Intermediate Range Ballistic Missiles s and Intercontinental Ballistic Missiles s. Given the small inventory of long-range ballistic missiles deployed by rogue states, thirty highly-ready Ground Based Interceptors will provide the United States substantial fire power.

These enhancements include:

Maintain traceability between the Ballistic Missile Defense System Specification, associated documentation and the corresponding Ground Based Midcourse Defense Element requirements and integration into Ballistic Missile Defense System; conduct Ground Based Midcourse Defense Build D Element Requirements Review and Preliminary Design Review for Ground Systems 8A, EKV 10.0 development that add Ballistic Missile Defense planning enhancements to the Space Based Infrared System interface, Warfighter operation, and other Command & Control, Battle Management and Communications enhancements

Ballistic Missile Defense System Integrated Build D functionality for Ground Based Midcourse Defense includes use of ballistic missile defense System Tracks to conduct engagements, interceptor feature-aided correlation, and support for system-level battle management engagement direction.

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Initiate design and analysis of the Ballistic Missile Defense System track capability using the Quality of Service requirement (that is, data of sufficient accuracy and low enough latency to support successful engagement of ballistic missiles) for associated Command & Control, Battle Management and Communications and sensor capabilities provided by Missile Defense Agency Systems Engineering Continue acquisition of 11 Ground Based Interceptors for fielding at Fort Greely, Alaska or Vandenberg Air Force Base to replace older fielded Ground Based Interceptors Initiate rotation plan of older fielded Ground Based Interceptors to Flight Test configuration to support Integrated Master Test Plan requirements Initiate acquisition of five additional Ground Based Interceptors with upgraded booster avionics (Fleet Avionics Upgrade/Obsolescence Program) to support Integrated Master Test Plan requirements and Stockpile Reliability, to include manufacturing line restart and vendor requalification; this will be the first new order of Ground Based Interceptors since 2006 Initiate development of software builds to utilize improved discrimination from Sensors, improve integration with the Ballistic Missile Defense System, accommodate upgraded Ground Based Interceptors, and incorporate recommendations from the Warfighter Continue integration of first seven silos for Missile Field-2 and Missile Field-2 Mechanical Electrical Building (MEB) to provide the Warfighter with a highly reliable and hardened Missile Field capability; restart installation, integration and checkout of seven additional silos to deliver Missile Field-2 in a 14 silo configuration Continue the Ballistic Missile Defense System flight and ground test program to bolster confidence in the missile defense capabilities under developments and ensure the capabilities transferred to the Warfighter are operationally effective, suitable, and survivable Continue 2-Stage Ground Based Interceptor for Flight Test Continue development of models and simulations to increase fidelity and assess system performance in areas unable to test Support the Ballistic Missile Defense System Hardware-In-The-Loop Modeling and Simulation Program Continue to provide for the operations and sustainment of Ground Based Midcourse Defense fielded capability at Fort Greely, Alaska, Vandenberg Air Force Base, the Missile Defense Integration Operations Center (MDIOC), and across the nation-wide Ground Based Midcourse Defense Communications Network						
B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Ground Systems		0.000	0.000	195.563	0.000	195.563
See Description Below						
FY 2009 Accomplishments:						
Accomplishments found in Projects AX08 and CX08						

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency				DATE: February 2010		
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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2010 Plans: Planned Program found in Projects AX08 and CX08						
FY 2011 Base Plans: The Ground Based Midcourse Defense Ground Systems enable control and operation of the Ground Based Midcourse Defense Element as part of the Ballistic Missile Defense System. Ground Systems consists of the Ground Based Midcourse Defense Fire Control, Test Exerciser, and External Systems Interface (ESI), Ground Based Midcourse Defense Communications Network (Ground Based Midcourse Defense Communications Network), In-Flight Interceptor Communications System (IFICS) Data Terminal (IDT), Launch Site Components (LSC) (silos, SIVs), and Launch Support Systems (LSS) (Command Launch Equipment (Command Launch Equipment) and Launch Support Equipment (LSE)). Continue improvement of Ground Systems capabilities, with the following functionalities which are included in Ballistic Missile Defense Systems Integrated Build C and Build D: Modify and upgrade Ground Systems 6B suite of products to integrate additional forward based radar (6B 1.5) from Sensor's Army Navy/Transportable Radar Surveillance radars, for Ground Based Midcourse Defense to provide Command & Control, Battle Management and Communications essential elements of information, 2-stage interceptor capability, Sea Based X-Band Radar-Interceptor Data Terminal dynamic positioning, Warfighter requested changes, and Fort Greely, Alaska Missile Field-2 support (6B.2 & Command Launch Equipment 4.3) Initiate design and development of Ground Systems 8A suite of products to utilize improved discrimination from Sensors X-band sensors, improve integration with the Command & Control, Battle Management and Communications, accommodate upgraded Ground Based Interceptors, and incorporate recommendations from the Warfighter Continue integration of the first seven silos for Missile Field-2 and Missile Field-2 Mechanical Electrical Building (MEB) to provide the Warfighter with a highly reliable and hardened Missile Field capability.						

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Restart installation, integration, and checkout of seven additional silos to deliver Missile Field-2 in a 14 silo configuration Explore incorporation of the Ballistic Missile Defense System Track capability into the Ground Based Midcourse Defense Fire Control loop consisting of sensor tracks from Sensors Army Navy/ Transportable Radar Surveillance radars or Aegis radars, track correlation performed by Command & Control, Battle Management and Communications to deliver a Ballistic Missile Defense System track to Ground Based Midcourse Defense for planning a Ground Based Interceptor engagement on the Ballistic Missile Defense system track FY 2011 OCO Plans: NA						
Element Engineering and Integration See Description Below FY 2009 Accomplishments: Accomplishments found in Project CX08 FY 2010 Plans: Planned Program found in Project CX08 FY 2011 Base Plans: Ground Based Midcourse Defense Element Engineering and Integration (EE&I) provides systems engineering and integration essential for the development and fielding of the Ground Based Midcourse Defense hardware and software. Included in this effort are concept definition, requirements and interfaces, system design, integration, test planning and verification. Key products are development and maintenance of the technical baseline and critical engineering processes for implementation and delivery of an integrated Ground Based Midcourse Defense element capability.		0.000	0.000	190.236	0.000	190.236

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>The Ballistic Missile Defense Digital Simulations Architecture (DSA) is the primary Models and Simulations System framework used to integrate Element baselines prior to flight or ground testing, facilitate technical trade-offs, concept analysis and trade studies, as well as providing support to Wargames and exercises within the Ballistic Missile Defense System Program. The DSA-performance architecture and Element and component high fidelity models support PA events, which provide critical system level performance data relative to all elements, system engineers, Models and Simulations developers, the OTA and Warfighters. The DSA-virtual architecture supports Element baseline integration, training, portions of ground testing and exercises.</p> <p>The Ballistic Missile Defense Single Stimulation Framework (SSF) utilizes Hardware-in-the-Loop (HWIL) assets to support primarily Ballistic Missile Defense System ground testing, pre and post-flight test mission construction and reconstruction, portions of the training capability, war-games, exercises and Ballistic Missile Defense System contingency studies, as well as various other use cases to enable Ballistic Missile Defense System performance in a simulated environment. Each Ballistic Missile Defense System Element supports the Models and Simulations Program by providing Hardware-In-The-Loop representations ready for integration into the Ballistic Missile Defense System system-level framework to support full-envelope Ballistic Missile Defense System ground test, flight test, and training events base upon Agency and Warfighter needs. Ground Based Midcourse Defense will support the Ballistic Missile Defense System Hardware-In-The-Loop Modeling and Simulation Program by integrating into the Ballistic Missile Defense System system-level Hardware-In-The-Loop single stimulation framework to support full-envelope Ballistic Missile Defense System ground test, flight test, and training events based upon Agency and Warfighter needs.</p> <p>Ground Based Midcourse Defense will support System Pre-Flight predictions for each system level flight test using the test framework set up with the Ballistic Missile Defense System configuration for a particular flight test. This provides the confidence in Flight Test execution by predicting element performance and exercising element interfaces. This work is also used to prove out the construct</p>						

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
of the flight test to ensure the required data and data management plan will support System Post Flight Reconstruction objectives. System Post Flight Reconstruction will use a Hardware-In-The-Loop and/or a Digital Models and Simulations Environment to replicate the day of flight for the Ballistic Missile Defense System configuration, modified to represent the actual environmental conditions and target dynamics observed in flight. The results of this testing are used to increase confidence in the models and simulations by anchoring the results with emphasis on the Critical Engagement Conditions (CECs) and Empirical Measurement Events (EMEs) back to the real world event. CECs/EMEs are the conditions and events where data is obtained from flight and ground tests in order to anchor system models and simulations system post flight reconstruction (SPFR) is used for validation (anchoring) of models and simulations.						
Continue modeling and simulation development and integration to assess component and system performance and execute annual technical assessments to support congressional reporting Continue modeling and simulation verification, validation, and accreditation to ensure high confidence in Warfighter assessments Continue engineering analysis, capability integration, and performance verification for successful Ground Based Midcourse Defense development and Ballistic Missile Defense System integration; integrate Ground Based Midcourse Defense Tactical System Hardware/Software with Missile Defense Agency Single Stimulation Framework in support of Ground Test-04 Campaign Continue system engineering effort enabling Unified Missile Defense Functions capabilities integration between Ground Based Midcourse Defense , Command & Control, Battle Management and Communications and Sensors Maintain traceability between the Ballistic Missile Defense System Specification, associated documentation and the corresponding Ground Based Midcourse Defense Element requirements and integration into Ballistic Missile Defense System; conduct Ground Based Midcourse Defense Build D Element Requirements Review and Preliminary Design Review for Ground Systems 8A, EKV 10.0 development that add Ballistic Missile Defense planning enhancements to the Space Based Infrared						

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B. Accomplishments/Planned Program (\$ in Millions)								
				FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
System interface, Warfighter operation, and other Command & Control, Battle Management and Communications enhancements.								
Ballistic Missile Defense System Integrated Build D functionality for Ground Based Midcourse Defense includes use of ballistic missile defense System Tracks to conduct engagements, interceptor feature-aided correlation, and support for system-level battle management engagement direction. Initiate engineering activities for Ground Based Midcourse Defense Build D Ground Systems 10A development Perform information assurance (IA):								
Conduct engineering and architectural analyses/studies; provide operations and maintenance for IA capabilities Maintain IA workforce training and certification; support certification and accreditation testing and analysis Support Component Requirements Review and Preliminary Design Reviews to ensure successful development capabilities Continue software management, verification, validation and planning for integration of Ground Based Midcourse Defense Fire Control 6B.2 functionality								
Ground Based Midcourse Defense provides Command & Control, Battle Management and Communications Essential Elements of Information (EEIs) Warfighter Enhancement Screen Displays Sensors provides advanced interoperability and discrimination information to Ground Based Midcourse Defense Continue software management, verification, validation and planning for integration of Ground Based Midcourse Defense Fire Control 8A functionality								

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Sensors provides Near Term Discrimination (NTD) information (with additional threat feature characteristics) to Ground Based Midcourse Defense for increasing Ground Based Interceptor Single Shot Probability of Kill performance Updated interface to Space Based Infrared Radar System Initiate design and analysis of the Ballistic Missile Defense System track capability using the Quality of Service requirement (that is, data of sufficient accuracy and low enough latency to support successful engagement of ballistic missiles) for associated Command & Control, Battle Management and Communications and sensor capabilities provided by Missile Defense Agency Systems Engineering Continue Ground Based Midcourse Defense System Verification Plan Development for Ballistic Missile Defense System Build D Requirements, including utilization of ballistic missile defense System Tracks to conduct engagements, interceptor feature-aided correclation, and support for system-level battle management engagement direction. Trace Ballistic Missile Defense System Specification requirements to Ground Based Midcourse Defense Capability Document, identify verification methods, document requirement variances for planning future development activities FY 2011 OCO Plans: NA						
Program Management See Description Below FY 2009 Accomplishments: Accomplishments found in Project CX08 FY 2010 Plans: Planned Program found in Project CX08		0.000	0.000	189.536	0.000	189.536

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2011 Base Plans:</i> This effort provides for the prime contractor and government management of the Ground Based Midcourse Defense program. Included in this effort is program and business management, program administration, technical and testing oversight, subcontractor management, verification of hardware and software development, quality/safety/mission assurance, integrated logistic support, and government manpower and infrastructure to develop, test and sustain the Ground Based Midcourse Defense system and components.</p> <p>Provide technical and business management support activities, financial management, cost and schedule performance analysis cost estimation and analysis, configuration management and integration activities Provide contractor program management, subcontract management, quality assurance, verification of hardware and software development, and technical and testing oversight Ensure Ground Based Midcourse Defense ; program compliance with internal and external direction, policies, and regulations Continue a ``Mission Assurance and Manufacturing Engineering Program`` to include Quality, Configuration Management, Manufacturing, Engineering, and Safety Provide Quality Safety and Mission Assurance (QSMA) operations to ensure compliance with Agency requirements for design, test, manufacturing, quality, safety and reliability</p> <p><i>FY 2011 OCO Plans:</i> NA</p>						
Ground Based Interceptor See Description Below <i>FY 2009 Accomplishments:</i> Accomplishments found in Projects AX08 and CX08		0.000	0.000	358.912	0.000	358.912

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2010 Plans: Planned Program found in Projects AX08 and CX08						
FY 2011 Base Plans: The Ground Based Interceptor program continues to complete manufacturing deliveries and improve the interceptor fleet reliability through improved booster and CE-II Exoatmospheric Kill Vehicle technologies to defend the Homeland. This demonstrated capability will enhance the Ballistic Missile Defense System against long and intermediate range ballistic missile attacks through the completion and fielding of five and continuation of six operational 3-stage interceptors to replace older fielded configuration to maintain a total of 30 operational assets. To aid in the accomplishment of this mission, the Ground Based Interceptor program provides developmental assets for flight testing through conversion of older fielded Ground Based Interceptors to Flight Test configuration. Ground Based Interceptor software builds will also be initiated to implement Near Term Discrimination (NTD) capability consisting of sensor tracks from Sensors radars, Single Shot Probability of Kill improvements, and booster software changes to accommodate the upgraded avionics (Fleet Avionics Upgrade/Obsolescence Program). Continue to expand and improve interceptor fleet: Complete one refurbishment Complete acquisition of five additional Ground Based Interceptors at Fort Greely, Alaska or Vandenberg Air Force Base to replace older fielded Ground Based Interceptors to reduce the age of the fielded fleet Continue acquisition of six Ground Based Interceptors to replace older fielded Ground Based Interceptors Initiate rotation plan of older fielded Ground Based Interceptors to Flight Test configuration to support Integrated Master Test Plan requirements						

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Initiate enhanced Refurbishment Kit and Limited Life Item Hardware purchases that will be used to refurbish the older fielded Ground Based Interceptors and improve reliability as part of the program plan to sustain the lifecycle of Ground Based Interceptors to Fiscal Year 2030 and beyond Initiate acquisition of five additional Ground Based Interceptors with upgraded booster avionics (Fleet Avionics Upgrade/Obsolescence Program) to support Integrated Master Test Plan requirements, to include manufacturing line restart and vendor requalification. Initiate Exoatmospheric Kill Vehicle software development of NTD capability improvements (provides enhanced discrimination using data from Sensors) and improvements for increasing Single Shot Probability of Kill to potentially reduce the number of interceptors allocated by the Warfighter for each threat Continue Ground Based Interceptor Stockpile Reliability Program which includes testing of available Ground Based Interceptor components to collect reliability and aging data and assessment of operational fleet refurbishment requirements Initiate Booster software development to accommodate the upgraded avionics (Fleet Avionics Upgrade/Obsolescence Program) Continue 2-Stage Ground Based Interceptor for Flight Test FY 2011 OCO Plans: NA						
BMDS Level Testing See Description Below FY 2009 Accomplishments: Accomplishments found in Projects AX08 and CX08 FY 2010 Plans: Planned Program found in Projects AX08 and CX08		0.000	0.000	182.247	0.000	182.247

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2011 Base Plans: Ground Based Midcourse Defense executes a rigorous test program that includes expanding our flight and ground test programs to test our capability against intermediate- and long-range threats. The test program is intended to bolster confidence in the missile defense capabilities under developments and ensure the capabilities transferred to the Warfighter are operationally effective, suitable, and survivable. Missile Defense Agency Element testing is based on an integrated, comprehensive, and phased test program. Element systems, subsystems, and components are tested early in development and are necessary prior to conducting Ballistic Missile Defense-System level testing. Ground Based Midcourse Defense Element Level testing is funded as part of a developmental program and reflected in this Program Element (Program Element) submission. This Program Element also provides Ground Based Midcourse Defense participation in the consolidated Missile Defense Agency-wide System Test Program and the resources for the, planning, design, execution, and management of Ground Based Midcourse Defense in Ballistic Missile DefenseSystem testing in accordance with the Ballistic Missile Defense System Test Policy, Missile Defense Agency Directive 3202.03 (January 2009). At the end of Fiscal Year 2011, the Critical Engagement Conditions / Empirical Measurement Event (CEC/EME)** data necessary to validation, verification, and accreditation of modeling and simulations is projected to increase from 44% to 59% complete Participate in Flight Test Ground Based Midcourse DefenseD-09, a 3-stage intercept engagement with associated objects, using a Ground Based Interceptor launch from Vandenberg Air Force Base against a target launched from Reagan Test (RTS) Critical Engagement Conditions / Empirical Measurement Event data collected validates Models and Simulations estimates on interceptor performance in medium closing velocity engagements and Exoatmospheric Kill Vehicle performance with multiple competing objects						

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p>Demonstrate Exoatmospheric Kill Vehicle 22.0 updates that improve single shot probability of kill, Exoatmospheric Kill Vehicle discrimination, enhancements for medium/high closing velocity intercepts and efficiencies on divert systems performance</p> <p>Initiate planning for Flight Test Ground Based Midcourse DefenseD-08, a 2-stage intercept engagement with associated objects, using a Ground Based Interceptor launch from Vandenberg Air Force Base against a target launched from RTS</p> <p>First time intercept with 2-stage interceptor</p> <p>Critical Engagement Conditions / Empirical Measurement Event data collected validates Models and Simulations estimates on booster, avionics and divert systems performance over time and Exoatmospheric Kill Vehicle discrimination performance on new threat scene with more and different types of multiple competing objects</p> <p>Demonstrate Ground Based Midcourse Defense Fire Control 6B.2/Command Launch Equipment 4.3 functionality with 2-stage interceptor flyouts and launch operations</p> <p>Conduct five Ground Based Midcourse Defense hardware component tests to collect Critical Engagement Conditions / Empirical Measurement Event data for anchoring models to validate system performance</p> <p>Conduct focused chamber ground tests to expand knowledge on solar effects and engagements with multiple competing objects on Exoatmospheric Kill Vehicle performance and Models and Simulations Verification, Validation, and Accreditation (VV&A)</p> <p>Testing Ground Based Interceptor through conducting a series of five digital simulations for Ground Based Interceptor performance assessments; these Ground Based Interceptor tests should lead to increased model fidelity with respect to Exoatmospheric Kill Vehicle sensor performance and allow the Warfighter to run more end-game scenarios when possible in place of flight tests</p> <p>Continue 2-Stage Ground Based Interceptor Flight Test Planning.</p> <p>Support execution of Ballistic Missile Defense System Ground Test-04 test campaign to assess Ballistic Missile Defense System capabilities</p>						

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
** Critical Engagement Conditions / Empirical Measurement Event (CEC/EME) are the conditions and events where data is obtained from flight and ground tests in order to anchor models and simulations. FY 2011 OCO Plans: NA						
Sustainment See Description Below FY 2009 Accomplishments: Accomplishments found in Project XX08 FY 2010 Plans: Planned Program found in Project XX08 FY 2011 Base Plans: The Operations and Sustainment mission provides for the operations, maintenance, repair, training, sustaining engineering (including stock pile reliability and logistics) of the Ground Based Midcourse Defense System. In addition to the above, base operations costs for Ground Based Midcourse Defense ; facilities in Colorado Springs, CO; Vandenberg AFB, CA (Vandenberg Air Force Base) and Fort Greely, AK (Fort Greely, Alaska) are included as well as Government Furnished Services and Equipment (GFX). Execution of the Operations and Sustainment mission will be achieved through a combination of directed activities under the competitively awarded Performance Based Logistics contract (operations, maintenance, repair and training) and through direct placement of funding to mission essential activities (stockpile reliability, logistics, base operations costs and GFX).		0.000	0.000	184.161	0.000	184.161

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APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)				R-1 ITEM NOMENCLATURE PE 0603882C: Ballistic Missile Defense Mid-Course Segment				PROJECT MD08: Ground Based Midcourse			
B. Accomplishments/Planned Program (\$ in Millions)											
						FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	
Provide Ground Based Midcourse Defense ; Element operations and sustainment for Primary Mission Equipment (PME), support equipment, and operational facilities at Fort Greely, Alaska, Colorado Springs, CO; and Vandenberg Air Force Base Continue minimal spare replenishment through improved logistics repair analysis captured through performance metrics Continue on-site sustaining engineering, ensuring logistics analysis is incorporated in technical data products Continue stockpile reliability and component aging testing to better understand the health of the deployed assets, thus ensuring the required improvements are made during planned refurbishments Continue training, education, and qualification/certification operations at the Joint Ground Based Midcourse Defense Training and Exercise Center (J-Ground TestEC) for the Warfighter and other staff Continue to develop and field System Level Ground Based Midcourse Defense ; Technical Manuals and update training materials to maintain Warfighter proficiency Conduct security engineering and planning in conjunction with concurrent MILCON planning and design to support an Fiscal Year 2013 MILCON project to upgrade Fort Greely, Alaska physical security FY 2011 OCO Plans: NA											
Accomplishments/Planned Programs Subtotals						0.000	0.000	1,300.655	0.000	1,300.655	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• 0603175C: Ballistic Missile Defense Technology	117.602	189.229	132.220	0.000	132.220	236.875	239.873	197.118	197.852	0	1,310.769
	951.414	715.732	436.482	0.000	436.482	250.275	336.711	500.983	521.717	0	3,713.314

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency									DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE				PROJECT			
0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)				PE 0603882C: Ballistic Missile Defense Mid-Course Segment				MD08: Ground Based Midcourse			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• 0603881C: Ballistic Missile Defense Terminal Defense Segment											
• 0603883C: Ballistic Missile Defense Boost Defense Segment	384.365	182.317	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	566.682
• 0603884C: Ballistic Missile Defense Sensors	682.754	621.017	454.859	0.000	454.859	469.589	681.397	650.525	616.342	0	4,176.483
• 0603886C: Ballistic Missile Defense System Interceptor	308.869	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	308.869
• 0603888C: Ballistic Missile Defense Test and Targets	906.952	823.333	1,113.425	0.000	1,113.425	1,105.959	951.371	871.929	829.608	0	6,602.577
• 0603890C: Ballistic Missile Defense Enabling Programs	402.776	358.751	402.769	0.000	402.769	468.673	457.745	473.871	488.799	0	3,053.384
• 0603891C: SPECIAL PROGRAMS - MDA	182.998	250.185	270.189	0.000	270.189	269.040	450.645	517.486	601.315	0	2,541.858
• 0603892C: BMD AEGIS	1,054.323	1,435.717	1,467.278	0.000	1,467.278	1,021.878	1,112.668	1,076.739	923.316	0	8,091.919
• 0603893C: SPACE TRACKING & SURVEILLANCE SYSTEM	209.831	161.609	112.678	0.000	112.678	98.500	56.424	52.928	34.661	0	726.631
• 0603894C: MULTIPLE KILL VEHICLE	226.027	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	226.027
• 0603895C: BMD SYSTEM SPACE PROGRAM	23.250	12.492	10.942	0.000	10.942	11.182	11.347	11.749	12.155	0	93.117
• 0603896C: BMD C2BMC	275.174	334.734	342.625	0.000	342.625	364.085	289.778	323.922	298.936	0	2,229.254
• 0603897C: BMD HERCULES	51.629	47.932	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	99.561
• 0603898C: BMD JOINT WARFIGHTER SUPPORT	66.283	61.098	68.726	0.000	68.726	62.239	63.451	65.158	67.231	0	454.186
• 0603901C: DIRECTED ENERGY RESEARCH	0.000	0.000	98.688	0.000	98.688	101.371	103.449	104.572	104.141	0	512.221
	102.823	86.483	86.198	0.000	86.198	88.181	78.517	80.410	83.087	0	605.699

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency									DATE: February 2010		
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0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)				PE 0603882C: Ballistic Missile Defense Mid-Course Segment				MD08: Ground Based Midcourse			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• 0603904C: MISSILE DEFENSE INTEGRATION & OPERATIONS CENTER (MDIOC)											
• 0603906C: REGARDING TRENCH	3.159	6.130	7.529	0.000	7.529	8.295	8.286	8.479	8.675	0	50.553
• 0603907C: SEA BASED X-BAND RADAR (SBX)	143.878	167.153	153.056	0.000	153.056	150.104	159.832	160.163	197.099	0	1,131.285
• 0603908C: BMD EUROPEAN INTERCEPTOR SITE	348.722	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	348.722
• 0603909C: BMD EUROPEAN MIDCOURSE RADAR	73.728	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	73.728
• 0603911C: BMD EUROPEAN CAPABILITY	0.000	50.226	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	50.226
• 0603912C: BMD European Comm Support	26.016	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	26.016
• 0603913C: ISRAELI COOPERATIVE	0.000	201.323	121.735	0.000	121.735	111.100	113.101	116.114	119.172	0	782.545
• 0604880C: LAND-BASED SM-3	0.000	0.000	281.378	0.000	281.378	345.937	187.062	93.456	139.595	0	1,047.428
• 0604881C: Aegis SM-3 BLOCK IIA CO-DEVELOPMENT	0.000	255.987	318.800	0.000	318.800	405.500	416.300	337.300	227.500	0	1,961.387
• 0604883C: PRECISION TRACKING SPACE SYSTEM	0.000	0.000	66.969	0.000	66.969	123.851	184.800	348.360	482.952	0	1,206.932
• 0604884C: AIRBORNE INFRARED (ABIR)	0.000	0.000	111.671	0.000	111.671	103.636	123.591	103.668	58.773	0	501.339
• 0605502C: Small Business Innovative Research BMDO	124.788	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	124.788
• 0901585C: Pentagon Reservation	20.146	19.709	20.482	0.000	20.482	0.000	0.000	0.000	0.000	0	60.337
	87.151	52.403	29.754	0.000	29.754	29.421	29.974	30.567	31.171	0	290.441

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency									DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)				R-1 ITEM NOMENCLATURE PE 0603882C: Ballistic Missile Defense Mid-Course Segment				PROJECT MD08: Ground Based Midcourse			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• 0901598C: Management Headquarters-MDA											
D. Acquisition Strategy											
<p>The Ground Based Midcourse Defense (Ground Based Midcourse Defense) program will continue to follow the Missile Defense Agency`s capability-based acquisition strategy that emphasizes testing, development, and evolutionary acquisition through incremental development. The Agency has structured the missile defense acquisition strategy to continually provide needed upgrades to the Ground Based Midcourse Defense system components within authorized funding availability. This process minimizes the risk of obsolescence, provides opportunities for standards updates, and allows decision makers to make informed trades between cost, schedule, and performance while exploring operational and technological possibilities.</p> <p>In Fiscal Year 2011 Ground Based Midcourse Defense will award a competitive Development and Sustainment Contract (DSC) for future development; fielding; test; systems engineering, integration and configuration management; equipment manufacturing and refurbishment; training, and operations and sustainment support for the Ground Based Midcourse Defense system and associated support facilities. This competition based acquisition approach will incorporate three current contracts with the DSC, emphasizes application of performance based tenets to establish long term relationships which provide timely high quality support of the core Ground Based Midcourse Defense weapons system while reducing life cycle and long-term ownership costs. The Ground Based Midcourse Defense competitive acquisition approach will help minimize the risk of obsolescence, provide opportunities for periodic weapons system refresh, and allow decision makers to make informed trades between cost, schedule, and performance while exploring operational and technological possibilities.</p> <p>Additionally, Missile Defense Agency will transition from the existing legacy, project-oriented Systems Engineering and Technical Assistance (SETA) contractor construct to an Missile Defense Agency enterprise-wide Advisory and Assistance Services (A&AS) approach to support the Ballistic Missile Defense System mission. The objectives are to implement national engineering and support services for the Ballistic Missile Defense System mission across the Missile Defense Agency enterprise and Ground Based Midcourse Defense , enhance the sharing of ballistic missile defense expertise and knowledge across the agency, centralize the acquisition of support services manpower in a more efficient manner and reduce agency overhead costs enterprise-wide. A&AS support for Ground Based Midcourse Defense will include engineering and technical services; studies, analyses, and evaluation; and management and professional services.</p>											
E. Performance Metrics											
NA											

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency											DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE					PROJECT			
0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)					PE 0603882C: Ballistic Missile Defense Mid-Course Segment					MD08: Ground Based Midcourse			
Product Development (\$ in Millions)													
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Ground Systems Long Haul Communications Transfer to Defense Information Systems Agency MD08	TBD/TBD	MDA DISA	0.000	0.000		6.967	Oct 2010	0.000		6.967	Continuing	Continuing	Continuing
Ground Systems Fort Greely Missile Field 2 MD08	SS/CPAF	Boeing AL/AK/AZ/CA/CO/VA	0.000	0.000		67.100	Jan 2011	0.000		67.100	Continuing	Continuing	Continuing
Ground Systems Ground Systems Engineering Services MD08	SS/CPAF	Boeing AL/AK/AZ/CA/CO/VA	0.000	0.000		39.378	Jan 2011	0.000		39.378	Continuing	Continuing	Continuing
Ground Systems Ground Systems Software Development 6B Dot Builds MD08	SS/CPAF	Boeing AL/AK/AZ/CA/CO/VA	0.000	0.000		21.412	Jan 2011	0.000		21.412	Continuing	Continuing	Continuing
Ground Systems Ground Systems Software Development 8A MD08	SS/CPAF	Boeing AL/AK/AZ/CA/CO/VA	0.000	0.000		27.804	Jan 2011	0.000		27.804	Continuing	Continuing	Continuing
Ground Based Interceptor Ground Based Interceptors 34-44 MD08	SS/CPAF	NA AL/AK/AZ/CA/CO/TX/VA	0.000	0.000		136.771	Jan 2011	0.000		136.771	Continuing	Continuing	Continuing
Ground Based Interceptor Ground Based Interceptors Refurbishments & Operational Spares MD08	SS/CPAF	NA AL/AK/AZ/CA/CO/TX/VA	0.000	0.000		73.153	Jan 2011	0.000		73.153	Continuing	Continuing	Continuing

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense Mid-Course Segment</i>				PROJECT MD08: <i>Ground Based Midcourse</i>					
Product Development (\$ in Millions)													
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Ground Based Interceptor Ground Based Interceptors Supplier Restart / Requalification MD08	SS/CPAF	NA AL/AK/AZ/CA/CO/TX/VA	0.000	0.000		40.029	Jan 2011	0.000		40.029	Continuing	Continuing	Continuing
Ground Based Interceptor Ground Based Interceptors Software Maintenance & Updates MD08	SS/CPAF	NA AL/AK/AZ/CA/CO/TX/VA	0.000	0.000		9.590	Jan 2011	0.000		9.590	Continuing	Continuing	Continuing
Ground Based Interceptor Ground Based Interceptors Fleet Avionics Upgrade/ Obsolescence Program Development MD08	SS/CPAF	NA AL/AK/AZ/CA/CO/TX/VA	0.000	0.000		39.114	Jan 2011	0.000		39.114	Continuing	Continuing	Continuing
Ground Based Interceptor Ground Based Interceptors Rotations for Ballistic Missile Defense System Level Testing MD08	SS/CPAF	NA AL/AK/AZ/CA/CO/TX/VA	0.000	0.000		60.255	Jan 2011	0.000		60.255	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		521.573		0.000		521.573			
Remarks NA													

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency											DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)					R-1 ITEM NOMENCLATURE PE 0603882C: Ballistic Missile Defense Mid-Course Segment					PROJECT MD08: Ground Based Midcourse				
Support (\$ in Millions)														
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total				
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract	
Ground Systems Ground Systems Prime Program Support MD08	SS/CPAF	Boeing AL/AK/AZ/CA/CO/TX/VA	0.000	0.000		32.902	Jan 2011	0.000		32.902	Continuing	Continuing	Continuing	
Element Engineering and Integration Ballistic Missile Defense System Hardware-In-The-Loop MD08	TBD/TBD	MDA AL/VA	0.000	0.000		34.257	Jan 2011	0.000		34.257	Continuing	Continuing	Continuing	
Element Engineering and Integration Modeling and Simulation MD08	SS/CPAF	Boeing AL/AK/AZ/CA/CO/TX/VA	0.000	0.000		48.554	Jan 2011	0.000		48.554	Continuing	Continuing	Continuing	
Element Engineering and Integration System Engineering and Integration MD08	SS/CPAF	Boeing AL/AK/AZ/CA/CO/TX/VA	0.000	0.000		84.391	Jan 2011	0.000		84.391	Continuing	Continuing	Continuing	
Element Engineering and Integration Information Assurance MD08	SS/CPAF	Boeing AL/AK/AZ/CA/CO/TX/VA	0.000	0.000		23.034	Jan 2011	0.000		23.034	Continuing	Continuing	Continuing	
Program Management DPW World-Wide Support MD08	TBD/TBD	MDA DPW/AL	0.000	0.000		28.789	Jan 2011	0.000		28.789	Continuing	Continuing	Continuing	
Program Management Prime Program Management MD08	SS/CPAF	Boeing AL/AK/AZ/CA/CO/TX/VA	0.000	0.000		61.905	Jan 2011	0.000		61.905	Continuing	Continuing	Continuing	
	TBD/TBD	MDA AL/VA	0.000	0.000		20.650	Jan 2011	0.000		20.650	Continuing	Continuing	Continuing	

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Support (\$ in Millions)													
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Govt Civilian Salaries MD08													
Program Management FFRDC Support MD08	TBD/TBD	MIT/LL AL/VA/CO	0.000	0.000		6.321	Jan 2011	0.000		6.321	Continuing	Continuing	Continuing
Program Management Contract Support Services MD08	C/CPAF	CSC LTAP AL/VA/CO/AK	0.000	0.000		67.071	Jan 2011	0.000		67.071	Continuing	Continuing	Continuing
Program Management Other Govt Agencies MD08	TBD/TBD	Various AL/VA/FL/CO	0.000	0.000		3.500	Jan 2011	0.000		3.500	Continuing	Continuing	Continuing
Program Management Safety and Quality MD08	C/CPAF	Boeing AL/AK/AZ/CA/CO/TX/VA	0.000	0.000		1.300	Jan 2011	0.000		1.300	Continuing	Continuing	Continuing
Sustainment Maintenance of Primary System MD08	SS/CPAF	Boeing AL/AK/CA	0.000	0.000		69.914	Jan 2011	0.000		69.914	Continuing	Continuing	Continuing
Sustainment Sustaining Support Services MD08	SS/CPAF	Boeing AL/AK/CA	0.000	0.000		49.895	Jan 2011	0.000		49.895	Continuing	Continuing	Continuing
Sustainment Operations & Sustainment Repair and Maintenance Personnel MD08	SS/CPAF	Boeing AL/AK/CA	0.000	0.000		11.614	Jan 2011	0.000		11.614	Continuing	Continuing	Continuing
Sustainment Stockpile Reliability MD08	TBD/TBD	Naval Surface Warfare Center IN	0.000	0.000		16.098	Jan 2011	0.000		16.098	Continuing	Continuing	Continuing

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Support (\$ in Millions)													
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Sustainment Fort Greely, Alaska Operations (Gov't Leases & Services) MD08	TBD/TBD	Army Ft. Greely, AK	0.000	0.000		15.440	Jan 2011	0.000		15.440	Continuing	Continuing	Continuing
Sustainment Vandenberg Air Force Base Operations (Gov't Leases & Services) MD08	TBD/TBD	Air Force Vandenberg, CA	0.000	0.000		4.500	Jan 2011	0.000		4.500	Continuing	Continuing	Continuing
Sustainment Colorado Springs Operations (Gov't Leases & Services) MD08	TBD/TBD	Air Force COS, CO	0.000	0.000		8.200	Jan 2011	0.000		8.200	Continuing	Continuing	Continuing
Sustainment Government Furnished Equipment & Services (GFX) MD08	TBD/TBD	Military Traffic Management Command Various	0.000	0.000		8.500	Jan 2011	0.000		8.500	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		596.835		0.000		596.835			
Remarks NA													

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency											DATE: February 2010		
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0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)					PE 0603882C: Ballistic Missile Defense Mid-Course Segment					MD08: Ground Based Midcourse			
Test and Evaluation (\$ in Millions)													
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
BMDS Level Testing Ground Test-04 Campaign (Focused-Integrated-Distributed) MD08	C/CPAF	Boeing AL/AK/AZ/CA/CO/TX/VA	0.000	0.000		15.640	Jan 2011	0.000		15.640	Continuing	Continuing	Continuing
BMDS Level Testing Ground Based Midcourse Defense Ground Chamber Tests MD08	C/CPAF	Boeing AL/AK/AZ/CA/CO/TX/VA	0.000	0.000		35.298	Jan 2011	0.000		35.298	Continuing	Continuing	Continuing
BMDS Level Testing Flight Test Range Costs MD08	TBD/TBD	VAFB, CA/RTS, Kwaj PRST, HI	0.000	0.000		24.486	Jan 2011	0.000		24.486	Continuing	Continuing	Continuing
BMDS Level Testing Flight Test Planning, Analysis & Execution MD08	C/CPAF	Boeing AL/AK/AZ/CA/CO/TX/VA	0.000	0.000		54.448	Jan 2011	0.000		54.448	Continuing	Continuing	Continuing
BMDS Level Testing Target of Opportunity Test Participation (Flight Test Sensors / Flight Test Experiment) MD08	C/CPAF	Boeing AL/AK/AZ/CA/CO/TX/VA	0.000	0.000		1.001	Jan 2011	0.000		1.001	Continuing	Continuing	Continuing
BMDS Level Testing Test Infrastructure & Support MD08	C/CPAF	Boeing AL/AK/AZ/CA/CO/TX/VA	0.000	0.000		43.954	Jan 2011	0.000		43.954	Continuing	Continuing	Continuing
BMDS Level Testing Flight Test Silo Turnaround MD08	C/CPAF	Boeing AL/AK/AZ/CA/CO/TX/VA	0.000	0.000		7.420		0.000		7.420	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Missile Defense Agency											DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense Mid-Course Segment</i>				PROJECT MD08: <i>Ground Based Midcourse</i>					
Test and Evaluation (\$ in Millions)													
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			0.000	0.000		182.247		0.000		182.247			
Remarks NA													
Management Services (\$ in Millions)													
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Subtotal			0.000	0.000		0.000		0.000		0.000			
Remarks NA													
			Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			0.000	0.000		1,300.655		0.000		1,300.655			
Remarks NA													

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Exhibit R-4, RDT&E Schedule Profile: PB 2011 Missile Defense Agency

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

0400: Research, Development, Test & Evaluation, Defense-Wide
BA 4: Advanced Component Development & Prototypes (ACD&P)

R-1 ITEM NOMENCLATURE

PE 0603882C: Ballistic Missile Defense Mid-Course Segment

PROJECT

MD08: Ground Based Midcourse

	FY 2009				FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Ground Test Focused-04d (Full Ballistic Missile Defense System Hardware-In-The-Loop Test)									■																			
Ground Systems 6B.2									■																			
Ground Based Interceptors 34-36									■	■																		
Ground Test Integrated-04 (Full Ballistic Missile Defense System Hardware-In-The-Loop Test)										■																		
Flight Test Ground Based Midcourse Defense-09											■																	
Ground Based Interceptors 37-38											■	■																
Ground Test Integrated-04 (EXE) (Full Ballistic Missile Defense System Hardware-In-The-Loop Test)												■																
Ground Based Interceptors 39-41													■	■														
Ground Test Distributed-04 (Full Ballistic Missile Defense System Distributed Test)														■														
Ground Based Interceptors 42-44															■	■												
Flight Test Ground Based Midcourse Defense-08 (Intercept Flight Test)																■												
Fort Greely, Alaska Missile Field - 2																	■											
Flight Test Ground Based Midcourse Defense-08 Ground Based Interceptor																	■											

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Exhibit R-4, RDT&E Schedule Profile: PB 2011 Missile Defense Agency

DATE: February 2010

APPROPRIATION/BUDGET ACTIVITY

0400: Research, Development, Test & Evaluation, Defense-Wide
BA 4: Advanced Component Development & Prototypes (ACD&P)

R-1 ITEM NOMENCLATURE

PE 0603882C: Ballistic Missile Defense Mid-Course Segment

PROJECT

MD08: Ground Based Midcourse

	FY 2009				FY 2010				FY 2011				FY 2012				FY 2013				FY 2014				FY 2015			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Ground Systems 8A																												
Ground Test Focused-05b (Strategic Focused Hardware-In-The-Loop Test)																												
Ground Test Integrated-05 (Full Ballistic Missile Defense System Hardware-In-The-Loop Test)																												
Ground Test Integrated-05 (EXE) (Full Ballistic Missile Defense System Hardware-In-The-Loop Test)																												
Flight Test Sensors-02 (Space Tracking & Surveillance System Demonstrator Flight Test)																												
Ground Test Distributed-05 (Full Ballistic Missile Defense System Distributed Test)																												
Flight Test Ground Based Midcourse Defense-11 (GMD Intercept Flight Test)																												
Ground Systems 10A																												
Ground Test-06 Campaign																												
EPOCH-2 (Ground Based Midcourse Defense/ Aegis/Terminal High Altitude Area Defense/ Patriot Multiple Engagement Flight Test)																												
Ground Based Interceptors Rotation and Refurbishment																												
FTG-13																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2011 Missile Defense Agency																								DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)												R-1 ITEM NOMENCLATURE PE 0603882C: Ballistic Missile Defense Mid-Course Segment												PROJECT MD08: Ground Based Midcourse			

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Exhibit R-4A, RDT&E Schedule Details: PB 2011 Missile Defense Agency			DATE: February 2010	
APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)		R-1 ITEM NOMENCLATURE PE 0603882C: Ballistic Missile Defense Mid-Course Segment		PROJECT MD08: Ground Based Midcourse
Schedule Details				
	Start		End	
Event	Quarter	Year	Quarter	Year
Ground Test Focused-04d (Full Ballistic Missile Defense System Hardware-In-The-Loop Test)	1	2011	1	2011
Ground Systems 6B.2	1	2011	1	2011
Ground Based Interceptors 34-36	1	2011	2	2011
Ground Test Integrated-04 (Full Ballistic Missile Defense System Hardware-In-The-Loop Test)	2	2011	2	2011
Flight Test Ground Based Midcourse Defense-09	3	2011	3	2011
Ground Based Interceptors 37-38	3	2011	4	2011
Ground Test Integrated-04 (EXE) (Full Ballistic Missile Defense System Hardware-In-The-Loop Test)	4	2011	4	2011
Ground Based Interceptors 39-41	1	2012	2	2012
Ground Test Distributed-04 (Full Ballistic Missile Defense System Distributed Test)	2	2012	2	2012
Ground Based Interceptors 42-44	3	2012	4	2012
Flight Test Ground Based Midcourse Defense-08 (Intercept Flight Test)	4	2012	4	2012
Fort Greely, Alaska Missile Field - 2	4	2012	4	2012
Flgith Test Ground Based Midcourse Defense-08 Ground Based Interceptor	4	2012	4	2012
Ground Systems 8A	4	2012	4	2012
Ground Test Focused-05b (Strategic Focused Hardware-In-The-Loop Test)	1	2013	1	2013
Ground Test Integrated-05 (Full Ballistic Missile Defense System Hardware-In-The-Loop Test)	3	2013	3	2013

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Exhibit R-4A, RDT&E Schedule Details: PB 2011 Missile Defense Agency			DATE: February 2010	
APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)		R-1 ITEM NOMENCLATURE PE 0603882C: Ballistic Missile Defense Mid-Course Segment		PROJECT MD08: Ground Based Midcourse
	Start		End	
Event	Quarter	Year	Quarter	Year
Ground Test Integrated-05 (EXE) (Full Ballistic Missile Defense System Hardware-In-The-Loop Test)	4	2013	4	2013
Flight Test Sensors-02 (Space Tracking & Surveillance System Demonstrator Flight Test)	1	2014	1	2014
Ground Test Distributed-05 (Full Ballistic Missile Defense System Distributed Test)	3	2014	3	2014
Flight Test Ground Based Midcourse Defense-11 (GMD Intercept Flight Test)	4	2014	4	2014
Ground Systems 10A	4	2014	4	2014
Ground Test-06 Campaign	2	2013	3	2015
EPOCH-2 (Ground Based Midcourse Defense/Aegis/Terminal High Altitude Area Defense/Patriot Multiple Engagement Flight Test)	3	2015	3	2015
Ground Based Interceptors Rotation and Refurbishment	1	2011	4	2015
FTG-13	4	2013	4	2013
Ground Based Interceptors 45 (2-Stage Fleet Avionics Upgrade/Obsolescence Program)	4	2014	4	2014
Ground Based Interceptors 46-49 (3-Stage Fleet Avionics Upgrade/Obsolescence Program)	1	2015	4	2015

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency								DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense Mid-Course Segment</i>				PROJECT ZX40: <i>Program-Wide Support</i>			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
ZX40: <i>Program-Wide Support</i>	78.242	18.722	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	96.964
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		
Note In accordance with the Missile Defense Agency revised budget structure, the content previously planned in Project ZX40 is now captured in Project MD40 beginning in FY11 A. Mission Description and Budget Item Justification Program-Wide Support provides funding for common non-headquarters support functions across the entire program. Includes costs for both government civilians performing these functions, as well as outside services and support contractors that augment government staff in these areas. Other costs included provide facility capabilities for MDA Executing Agent locations (with the exception of Federal Office Building 2), such as physical and technical security, legal services, travel and training, office and equipment leases, utilities and communications, supplies and maintenance, and similar operating expenses. Also includes funding for charges on canceled appropriations in accordance with Public Law 101-510, legal settlements, and foreign currency fluctuations on a limited number of foreign contracts. B. Accomplishments/Planned Program (\$ in Millions)											
						FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	
Civilian Salaries and Support						78.242	18.722	0.000	0.000	0.000	
See Description Below											
<i>FY 2009 Accomplishments:</i>											
See Section A: Mission Description and Budget Item Justification											
<i>FY 2010 Plans:</i>											
NA											

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency									DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)				R-1 ITEM NOMENCLATURE PE 0603882C: Ballistic Missile Defense Mid-Course Segment				PROJECT ZX40: Program-Wide Support			
B. Accomplishments/Planned Program (\$ in Millions)											
						FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	
FY 2011 Base Plans: NA											
FY 2011 OCO Plans: NA											
Accomplishments/Planned Programs Subtotals						78.242	18.722	0.000	0.000	0.000	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• 0603175C: Ballistic Missile Defense Technology	117.602	189.229	132.220	0.000	132.220	236.875	239.873	197.118	197.852	0	1,310.769
• 0603881C: Ballistic Missile Defense Terminal Defense Segment	951.414	715.732	436.482	0.000	436.482	250.275	336.711	500.983	521.717	0	3,713.314
• 0603883C: Ballistic Missile Defense Boost Defense Segment	384.365	182.317	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	566.682
• 0603884C: Ballistic Missile Defense Sensors	682.754	621.017	454.859	0.000	454.859	469.589	681.397	650.525	616.342	0	4,176.483
• 0603886C: Ballistic Missile Defense System Interceptor	308.869	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	308.869
• 0603888C: Ballistic Missile Defense Test and Targets	906.952	823.333	1,113.425	0.000	1,113.425	1,105.959	951.371	871.929	829.608	0	6,602.577
• 0603890C: Ballistic Missile Defense Enabling Programs	402.776	358.751	402.769	0.000	402.769	468.673	457.745	473.871	488.799	0	3,053.384
• 0603891C: SPECIAL PROGRAMS - MDA	182.998	250.185	270.189	0.000	270.189	269.040	450.645	517.486	601.315	0	2,541.858

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency									DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE				PROJECT			
0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)				PE 0603882C: Ballistic Missile Defense Mid-Course Segment				ZX40: Program-Wide Support			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• 0603892C: BMD AEGIS	1,054.323	1,435.717	1,467.278	0.000	1,467.278	1,021.878	1,112.668	1,076.739	923.316	0	8,091.919
• 0603893C: SPACE TRACKING & SURVEILLANCE SYSTEM	209.831	161.609	112.678	0.000	112.678	98.500	56.424	52.928	34.661	0	726.631
• 0603894C: MULTIPLE KILL VEHICLE	226.027	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	226.027
• 0603895C: BMD SYSTEM SPACE PROGRAM	23.250	12.492	10.942	0.000	10.942	11.182	11.347	11.749	12.155	0	93.117
• 0603896C: BMD C2BMC	275.174	334.734	342.625	0.000	342.625	364.085	289.778	323.922	298.936	0	2,229.254
• 0603897C: BMD HERCULES	51.629	47.932	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	99.561
• 0603898C: BMD JOINT WARFIGHTER SUPPORT	66.283	61.098	68.726	0.000	68.726	62.239	63.451	65.158	67.231	0	454.186
• 0603901C: DIRECTED ENERGY RESEARCH	0.000	0.000	98.688	0.000	98.688	101.371	103.449	104.572	104.141	0	512.221
• 0603904C: MISSILE DEFENSE INTEGRATION & OPERATIONS CENTER (MDIOC)	102.823	86.483	86.198	0.000	86.198	88.181	78.517	80.410	83.087	0	605.699
• 0603906C: REGARDING TRENCH	3.159	6.130	7.529	0.000	7.529	8.295	8.286	8.479	8.675	0	50.553
• 0603907C: SEA BASED X-BAND RADAR (SBX)	143.878	167.153	153.056	0.000	153.056	150.104	159.832	160.163	197.099	0	1,131.285
• 0603908C: BMD EUROPEAN INTERCEPTOR SITE	348.722	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	348.722
• 0603909C: BMD EUROPEAN MIDCOURSE RADAR	73.728	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	73.728
• 0603911C: BMD EUROPEAN CAPABILITY	0.000	50.226	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	50.226
• 0603912C: BMD European Comm Support	26.016	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	26.016
	0.000	201.323	121.735	0.000	121.735	111.100	113.101	116.114	119.172	0	782.545

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency									DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)				R-1 ITEM NOMENCLATURE PE 0603882C: Ballistic Missile Defense Mid-Course Segment				PROJECT ZX40: Program-Wide Support			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• 0603913C: ISRAELI COOPERATIVE											
• 0604880C: LAND-BASED SM-3	0.000	0.000	281.378	0.000	281.378	345.937	187.062	93.456	139.595	0	1,047.428
• 0604881C: Aegis SM-3 BLOCK IIA CO-DEVELOPMENT	0.000	255.987	318.800	0.000	318.800	405.500	416.300	337.300	227.500	0	1,961.387
• 0604883C: PRECISION TRACKING SPACE SYSTEM	0.000	0.000	66.969	0.000	66.969	123.851	184.800	348.360	482.952	0	1,206.932
• 0604884C: AIRBORNE INFRARED (ABIR)	0.000	0.000	111.671	0.000	111.671	103.636	123.591	103.668	58.773	0	501.339
• 0605502C: Small Business Innovative Research BMDO	124.788	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	124.788
• 0901585C: Pentagon Reservation	20.146	19.709	20.482	0.000	20.482	0.000	0.000	0.000	0.000	0	60.337
• 0901598C: Management Headquarters-MDA	87.151	52.403	29.754	0.000	29.754	29.421	29.974	30.567	31.171	0	290.441
D. Acquisition Strategy											
NA											
E. Performance Metrics											
NA											

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency								DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				R-1 ITEM NOMENCLATURE PE 0603882C: <i>Ballistic Missile Defense Mid-Course Segment</i>				PROJECT MD40: <i>Program-Wide Support</i>			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	0.000	0.000	45.526	0.000	45.526	40.698	41.988	34.457	36.232	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		
Note In accordance with the Missile Defense Agency revised budget structure, the content previously planned in Project ZX40 is now captured in Project MD40 beginning in FY11 A. Mission Description and Budget Item Justification Program-Wide Support provides funding for common non-headquarters support functions across the entire program. Includes costs for both government civilians performing these functions, as well as outside services and support contractors that augment government staff in these areas. Other costs included provide facility capabilities for MDA Executing Agent locations (with the exception of Federal Office Building 2), such as physical and technical security, legal services, travel and training, office and equipment leases, utilities and communications, supplies and maintenance, and similar operating expenses. Also includes funding for charges on canceled appropriations in accordance with Public Law 101-510, legal settlements, and foreign currency fluctuations on a limited number of foreign contracts. B. Accomplishments/Planned Program (\$ in Millions)											
						FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	
Civilian Salaries and Support See Description Below <i>FY 2009 Accomplishments:</i> NA <i>FY 2010 Plans:</i> NA						0.000	0.000	45.526	0.000	45.526	

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency										DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)				R-1 ITEM NOMENCLATURE PE 0603882C: Ballistic Missile Defense Mid-Course Segment				PROJECT MD40: Program-Wide Support				
B. Accomplishments/Planned Program (\$ in Millions)												
								FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2011 Base Plans: NA												
FY 2011 OCO Plans: NA												
Accomplishments/Planned Programs Subtotals								0.000	0.000	45.526	0.000	45.526
C. Other Program Funding Summary (\$ in Millions)												
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost	
• 0603175C: Ballistic Missile Defense Technology	117.602	189.229	132.220	0.000	132.220	236.875	239.873	197.118	197.852	0	1,310.769	
• 0603881C: Ballistic Missile Defense Terminal Defense Segment	951.414	715.732	436.482	0.000	436.482	250.275	336.711	500.983	521.717	0	3,713.314	
• 0603883C: Ballistic Missile Defense Boost Defense Segment	384.365	182.317	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	566.682	
• 0603884C: Ballistic Missile Defense Sensors	682.754	621.017	454.859	0.000	454.859	469.589	681.397	650.525	616.342	0	4,176.483	
• 0603886C: Ballistic Missile Defense System Interceptor	308.869	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	308.869	
• 0603888C: Ballistic Missile Defense Test and Targets	906.952	823.333	1,113.425	0.000	1,113.425	1,105.959	951.371	871.929	829.608	0	6,602.577	
• 0603890C: Ballistic Missile Defense Enabling Programs	402.776	358.751	402.769	0.000	402.769	468.673	457.745	473.871	488.799	0	3,053.384	
• 0603891C: SPECIAL PROGRAMS - MDA	182.998	250.185	270.189	0.000	270.189	269.040	450.645	517.486	601.315	0	2,541.858	

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency										DATE: February 2010	
APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE				PROJECT			
0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)				PE 0603882C: Ballistic Missile Defense Mid-Course Segment				MD40: Program-Wide Support			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• 0603892C: BMD AEGIS	1,054.323	1,435.717	1,467.278	0.000	1,467.278	1,021.878	1,112.668	1,076.739	923.316	0	8,091.919
• 0603893C: SPACE TRACKING & SURVEILLANCE SYSTEM	209.831	161.609	112.678	0.000	112.678	98.500	56.424	52.928	34.661	0	726.631
• 0603894C: MULTIPLE KILL VEHICLE	226.027	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	226.027
• 0603895C: BMD SYSTEM SPACE PROGRAM	23.250	12.492	10.942	0.000	10.942	11.182	11.347	11.749	12.155	0	93.117
• 0603896C: BMD C2BMC	275.174	334.734	342.625	0.000	342.625	364.085	289.778	323.922	298.936	0	2,229.254
• 0603897C: BMD HERCULES	51.629	47.932	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	99.561
• 0603898C: BMD JOINT WARFIGHTER SUPPORT	66.283	61.098	68.726	0.000	68.726	62.239	63.451	65.158	67.231	0	454.186
• 0603901C: DIRECTED ENERGY RESEARCH	0.000	0.000	98.688	0.000	98.688	101.371	103.449	104.572	104.141	0	512.221
• 0603904C: MISSILE DEFENSE INTEGRATION & OPERATIONS CENTER (MDIOC)	102.823	86.483	86.198	0.000	86.198	88.181	78.517	80.410	83.087	0	605.699
• 0603906C: REGARDING TRENCH	3.159	6.130	7.529	0.000	7.529	8.295	8.286	8.479	8.675	0	50.553
• 0603907C: SEA BASED X-BAND RADAR (SBX)	143.878	167.153	153.056	0.000	153.056	150.104	159.832	160.163	197.099	0	1,131.285
• 0603908C: BMD EUROPEAN INTERCEPTOR SITE	348.722	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	348.722
• 0603909C: BMD EUROPEAN MIDCOURSE RADAR	73.728	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	73.728
• 0603911C: BMD EUROPEAN CAPABILITY	0.000	50.226	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	50.226
• 0603912C: BMD European Comm Support	26.016	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	26.016
	0.000	201.323	121.735	0.000	121.735	111.100	113.101	116.114	119.172	0	782.545

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Exhibit R-2A, RDT&E Project Justification: PB 2011 Missile Defense Agency									DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 4: Advanced Component Development & Prototypes (ACD&P)				R-1 ITEM NOMENCLATURE PE 0603882C: Ballistic Missile Defense Mid-Course Segment				PROJECT MD40: Program-Wide Support			
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• 0603913C: ISRAELI COOPERATIVE											
• 0604880C: LAND-BASED SM-3	0.000	0.000	281.378	0.000	281.378	345.937	187.062	93.456	139.595	0	1,047.428
• 0604881C: Aegis SM-3 BLOCK IIA CO-DEVELOPMENT	0.000	255.987	318.800	0.000	318.800	405.500	416.300	337.300	227.500	0	1,961.387
• 0604883C: PRECISION TRACKING SPACE SYSTEM	0.000	0.000	66.969	0.000	66.969	123.851	184.800	348.360	482.952	0	1,206.932
• 0604884C: AIRBORNE INFRARED (ABIR)	0.000	0.000	111.671	0.000	111.671	103.636	123.591	103.668	58.773	0	501.339
• 0605502C: Small Business Innovative Research BMDO	124.788	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0	124.788
• 0901585C: Pentagon Reservation	20.146	19.709	20.482	0.000	20.482	0.000	0.000	0.000	0.000	0	60.337
• 0901598C: Management Headquarters-MDA	87.151	52.403	29.754	0.000	29.754	29.421	29.974	30.567	31.171	0	290.441
D. Acquisition Strategy											
MDA will transition from the existing legacy, project-oriented Systems Engineering and Technical Assistance (SETA) contractor construct to an enterprise-wide Advisory and Assistance Services (A&AS) approach to support the Ballistic Missile Defense System (BMDS) mission. The objectives are to implement national engineering and support services for the BMDS mission across the enterprise, enhance the sharing of ballistic missile defense expertise and knowledge across the agency, centralize the acquisition of support services manpower in a more efficient manner and reduce agency overhead costs enterprise-wide. A&AS support includes engineering and technical services; studies, analyses, and evaluation; and management and professional services.											
E. Performance Metrics											
NA											

UNCLASSIFIED

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